



Capture, Edit & Burn: We Compare The Top Media Creation Suites p.20



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In Plain English

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It's Time To
Reinstall Your



PC Project

Move Data & Apps
To A New PC p.78

Operating System



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GPS Showdown

MapQuest's Personal
Navigation Device

vs.

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Our *Smart Computing* columnists spent some quality time with computer and computer-related hardware and software to get beyond the benchmark scores, statistics, and marketing hype. Find out what they liked and disliked about their choices.

20 Get Media Savvy

To get the most out of your rewriteable drive, you need a suite of tools that can help you burn music CDs, create video DVDs, edit multimedia content, perform system backups, and more. But which media-creation suite is best? We can help you with that.

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36 Add A Mac To The Mix

Whenever you ask a group of users to network their computers for the sake of sharing resources and increasing productivity, there's bound to be someone with a Macintosh. But can a Mac play nicely with PCs? Good question.

40 The Thrifty PC

Just how much money can you save by building your own computer nowadays? We decided to find out.

Plugged In

44 Mr. Modem's Desktop: Mr. Modem Waxes . . . Um, Poetic

In which Mr. Modem, author of several books—none of which has won the Pulitzer Prize—and co-host of the weekly "PC Chat" radio show, offers up the year's first collection of tips and tricks.



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Tech Support

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You've been hearing about SATA drives. We show you how they're different and what they can do for you.

Editor's Note: Reinstall Your Operating System

Think back to your last visit to the dentist. Remember that feeling? The fear? The clammy skin? The jangling nerves? It took everything you had to make yourself get in the car and drive over there, didn't it? (Now, don't lie. I'll know if you lie.)

Well, now it's time to think about reinstalling your OS (operating system), and you're feeling pretty much the same about it as you felt about going to the dentist: You know it's something you need to do, but you'd do almost anything to avoid it.

And why wouldn't you feel that way? After all, reinstalling your OS is a little like going to the dentist, except that if the visit to the dentist goes wrong, the worst that can happen is that you suffer agonizing pain and maybe your mouth falls off. This is worse, much worse. Make a wrong move when reinstalling your OS, and your computer could turn into nothing more than a very expensive USB-enabled doorstop. You could lose years' worth of data. And you'll have to explain to your significant other why it is that you now need to spend \$1,000 to \$3,000 on a new computer. Hard to say which of those—the data loss, the cost, or the explanation—is worse, actually. (Of course, you could always put the computer out in the backyard and hope that a meteor hits it. YOU: "Well, Honey, I don't know what happened. I put the computer out in the yard to . . . um, air it out, and the next thing I know, WHAM!, a meteor smashes into it!" SIGNIFICANT OTHER: "What, again?!")

Or you could just read this issue of *Smart Computing*. We'll take you through the entire process, including what to do *before* you start reinstalling and what to do if you run into trouble.

If that doesn't work, there's a meteor shower on May 16, the Corona-Australids.



ROD SCHER, PUBLICATION EDITOR

Now Available On Newsstands ...

Computer Power User * Don't Be Disconnected

These days, home networking is about much more than just sharing a printer or broadband. In this issue, get up to speed on what networking can do for you, find out what's around the corner, and get some pointers on cool networking projects you might not have tried yet.

PC Today * Troubleshoot Your PDA

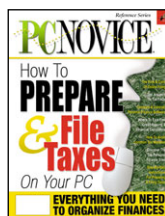
As manufacturers pack more features into PDAs and smart-phones, opportunities for errors and crashes increase, as well. In the March *PC Today*, we help you solve some common and not-so-common problems you might encounter with Palm and Windows Mobile devices.

CE Lifestyles * CE For Kids

Your kids are always looking for the latest and greatest in everything, and that includes technology. There are laptops, digital cameras, gaming systems, and MP3 players made specifically for children, but do all those devices put kids in CE overdrive? This month, we give you guidelines on what types of electronics are best for kids and when, and we'll also tell you what will be this year's must-have gifts for kids of all ages.

Reference Series * How To Prepare & File Taxes On Your PC

It's that time of year again: The threat of having to do your taxes looms large, and you're not looking forward to the job. Don't despair, we can help. This issue of the *Reference Series* will tell you everything you need to know about using your computer to prepare and file those dreaded returns; we'll even get you set up so that next year won't be quite so . . . well, taxing.



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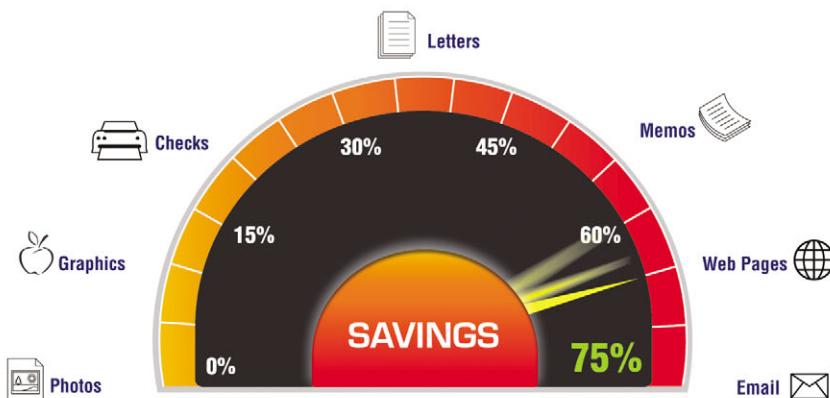


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Smart Computing subscribers may read the following articles at SmartComputing.com.

Hardware

For all the latest product reviews, visit the Hardware Reviews & Comparison Charts area at SmartComputing.com (www.smartcomputing.com).

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Linux: Quick & Easy Image Galleries In Linux

Show off those digital snapshots with the assistance of Linux.

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Find Content Within Pages While Using Firefox Or Internet Explorer

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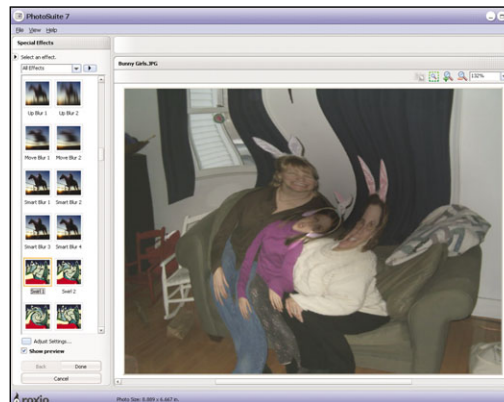
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InDesign Opens New Horizons, Part I

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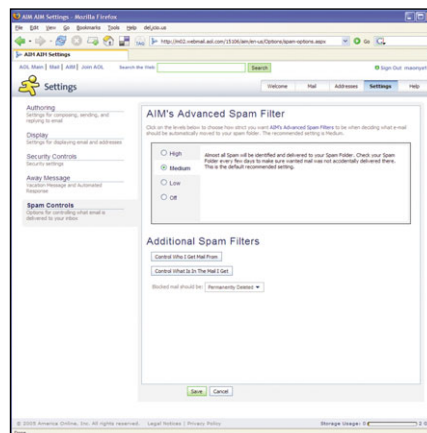
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DESKTOPS & LAPTOPS

Smaller, Faster, Cooler: It's The Intel Way

With each passing day, it's getting harder to justify owning a clunky, space-hogging tower PC, especially when companies such as Intel continue to release notebook technology that's faster and more battery-efficient than ever before.

Intel's latest announcement centers around Napa, the next generation of its Centrino mobile platform, which the company touted in demonstrations in early 2005. What's particularly interesting about Napa is its use of the first dual-core mobile chip, known as the Yonah microprocessor. This new technology will provide a 68% boost to average notebook performance (compared to the company's current Sonoma platform) and a reduction of power consumption by an impressive 28%. In recent months we've noted the prospects of notebook battery life extending to five hours and beyond, and with Napa, Intel is delivering on that promise. Further, Napa also can help manufacturers reduce the size of notebooks by a whopping 30%.

"Trends predicted in 2003 for 2007 are already being surpassed today, and we expect it to accelerate more," said Erik Reid, product marketing director at Intel's Mobile Platforms Group at a recent Intel press session. "We have a brand-new microprocessor, all delivering more capabilities with longer battery life. And there are new capabilities evolving every day that will tax the system further. Now you won't have to compromise; you won't have to wait for adoption."

The next-generation platform will use only about 3 watts of power, which is down a watt from competing platforms, a savings helped by the dual-core approach used by Yonah that lets notebooks finish tasks more quickly. Intel's new Dynamic Power Coordination feature lets the platform manage the power of the two cores independently, which will help notebooks save power when two cores aren't needed for specific tasks. Other features previously revealed for the platform include Advanced Thermal Manager (for enhanced thermal monitoring) and Digital Media Boost (for rich digital multimedia content creation).

Napa is set to appear in more than 230 notebook designs from manufacturers this year, eclipsing the number of designs that appeared with the Sonoma release. Although Napa-based computers won't cost much more than those using Sonoma, says Keith Kressin, director of marketing for Intel's Mobile Platforms Group, you'll still get a wealth of benefits. "There are no compromises," he says. "Everything is better with Napa."

The next-generation platform, which some are calling the biggest upgrade to mobile technology in two years, is launching in notebooks this year. ■



STORAGE

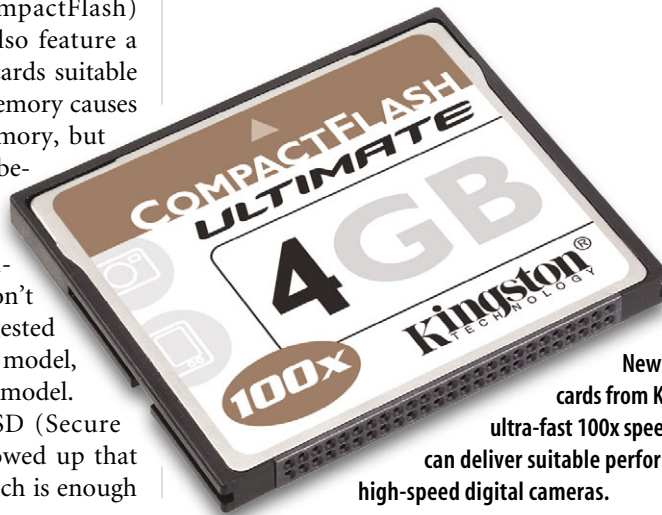
New Flash Tech Boosts Speed & Storage

Today's flash memory continues to make a mockery of yesterday's floppy diskettes, boasting constant improvements in both speed and capacity. Two of the latest advances—announced recently by Kingston and Pretec—are particularly exciting.

Kingston's new Ultimate line of CF (CompactFlash) cards not only stores up to 4GB, but they also feature a lightning-fast 100x speed rating, making the cards suitable for high-speed digital cameras. Slower flash memory causes delays when cameras write images to the memory, but the faster the rating, the less you have to wait before you can snap another shot. As camera prices continue to drop, even affordable consumer cameras now take advantage of high-speed flash memory, so the cards probably won't appeal just to the high-end market. The suggested retail prices of the cards are \$129 for the 1GB model, \$200 for the 2GB model, and \$350 for the 4GB model.

Last summer, Pretec introduced a 4GB SD (Secure Digital) card, and the company recently followed up that milestone with the first 2GB MiniSD card, which is enough

storage for more than 500 MP3s or 4,000 digital photos. This MiniSD card could prove particularly useful for mobile phones that support the format, as the devices generally don't include a wealth of on-board memory. Pretec's new card retails for about \$300. ■



New CF (CompactFlash) cards from Kingston feature ultra-fast 100x speed ratings that can deliver suitable performance for high-speed digital cameras.

DISPLAYS

Plastic: The New Glass

If you think plastic is taking over the world, you might be right. A company that develops plastic electronics unveiled what it calls the world's largest flexible organic active matrix display, which is essentially fancy-speak for a plastic, bendable display.

Plastic Logic's new technology uses a flexible backplane that drives an electronic "paper" frontplane developed by E Ink. The displays measure 10 inches diagonally and feature 600 x 800 resolution and four levels of grayscale. E Ink's display material gives the monitor an appearance of a printed page, and like paper, it's flexible and can even be rolled.

"Glass-based active-matrix displays like your laptop screen are heavy and fragile," explains Simon Jones, Plastic Logic's vice president of business development. "They cannot address many

applications in mobile devices and retail signage where there is a strong market demand for large, thin, and unbreakable screens. Plastic Logic's approach of printing transistors on plastic is the first commercially attractive solution to meet this market need. The flexibility of the display even allows a pressure sensor to be placed under the screen to implement a touchscreen without compromising the optical performance of the display."

Although the displays are in the early stages of development, we could see them appearing in devices by the end of 2007 or 2008. ■



Although this looks like a piece of paper adorned with printed ink, it's actually a new flexible, plastic active matrix display.

PRINTERS & PERIPHERALS

Keyboard-A-Go-Go

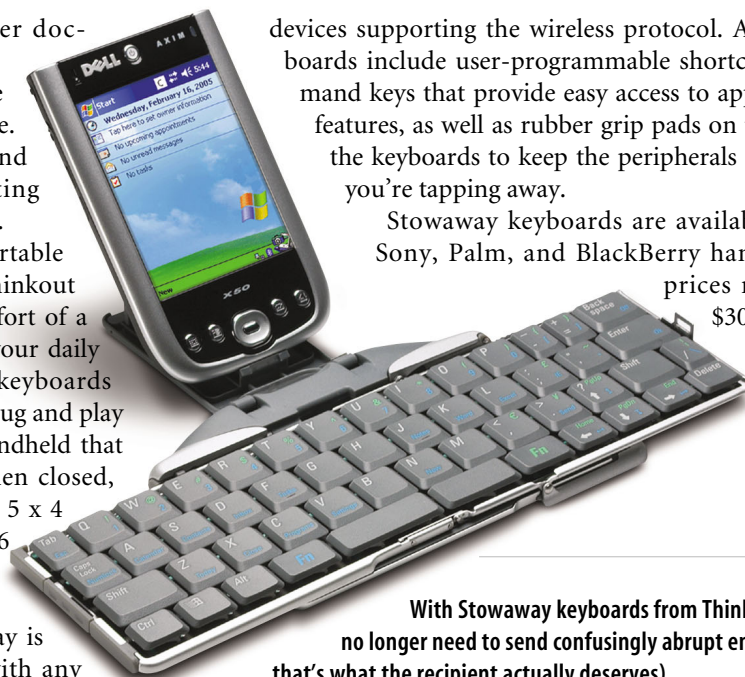
Typing out lengthy emails or other documents on handheld devices is roughly equivalent to having multiple tooth cavities filled—without novocaine. But if you look around, it's easy to find great alternatives to the ever-frustrating stylus click-a-thons or thumb bruise-fests.

For example, take the Stowaway portable keyboard from Think Outside (www.thinkoutside.com), which can bring all the comfort of a standard-sized QWERTY keyboard to your daily mobile activities. Not only are these keyboards portable, but they let you immediately plug and play and provide a handy stand for your handheld that connects directly to the keyboard. When closed, the 6-ounce keyboards measure around 5 x 4 inches; when open, they're around 10 x 6 inches. Plus, their rugged construction means you won't have to baby them.

The coolest iteration of the Stowaway is the Bluetooth version, which works with any

devices supporting the wireless protocol. All of the keyboards include user-programmable shortcuts and command keys that provide easy access to applications and features, as well as rubber grip pads on the bottom of the keyboards to keep the peripherals in place while you're tapping away.

Stowaway keyboards are available for iPAQ, Sony, Palm, and BlackBerry handhelds, with prices ranging from \$30 to \$150. ■



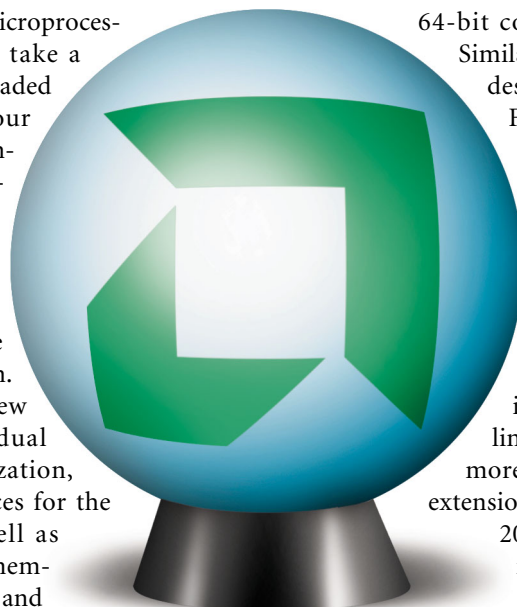
With Stowaway keyboards from Think Outside, you no longer need to send confusingly abrupt emails (unless that's what the recipient actually deserves).

CPUs, CHIPS & CARDS

Inside AMD's Crystal Ball

In the ever-morphing world of microprocessors, it helps to step back and take a broader view of where chips are headed to see what might be powering your next PC or notebook. AMD uses immediate and distant product outlooks to give us a glimpse of what the Intel rival has in store in the near and far future.

This year, AMD's mobile focus will be on the Turion 64, the Mobile Athlon 64, and the Mobile Sempron. Each family of chips should see new technology this year, including dual cores, support for DDR2, virtualization, and dual-channel memory interfaces for the Turion 64 and Athlon 64, as well as support for DDR2, dual-channel memory interfaces, and simultaneous 32- and



64-bit computing for the Mobile Sempron. Similar technologies will appear in AMD's desktop chips, including the Athlon 65 FX, Athlon 64 X2, Athlon 64, and Sempron—though the Athlon 64 and Athlon 64 X2 also will see new high-performance energy efficiency features. This year also will ring in platform technologies such as Advanced Thermal Management and Advanced Power Management.

Beyond this year, AMD has some interesting technologies in the pipeline. For 2007, the company is targeting more than two cores, AMD64 instruction extensions, and shared L3 (level 3) cache. For 2008, we can expect to see Direct Connect Architecture 2.0 and greater than eight-way computing. ■

DIGITAL MISCELLANEA

New WordPerfect Features Editable PDFs

As office productivity suites continue to cram in every feature but the digital kitchen sink, there remain some features we wish we could have but never seem to get them. For example, it sure would be great to convert PDF files into editable text instead of being locked into the PDF format. The good news is that the PDF-to-text conversion process is finally here, and it doesn't come from Redmond.

Corel recently unveiled WordPerfect Office X3, the latest version of the long-standing alternative to Microsoft Office. With X3, users can now export and import PDFs, giving anyone the ability to modify and share PDF file content. There are plenty of other new features in this suite, including a new interface that gives WordPerfect a modern look and feel; online tools embedded directly into the

application for fast and easy Internet searching; greater compatibility with Microsoft Office; and metadata removal. Also included are tried-and-true WordPerfect features such as real-time preview and reveal codes.

The Standard edition starts at \$159 using the upgrade option (\$299 for the full version) and includes the recently released WordPerfect Mail with a fast search capability.

WordPerfect Office X3 also is available in a Home Edition for \$99 (with a \$20 rebate), which includes Paint Shop Photo Album for digital image editing, Pinnacle for video editing, and Symantec's Norton Internet Security 2006. ■



The latest version of WordPerfect blends a slick interface with cutting-edge features, such as the ability to import and convert PDF files to text.

COOL TOOLS

InstallAware Cuts Size & Increases Function

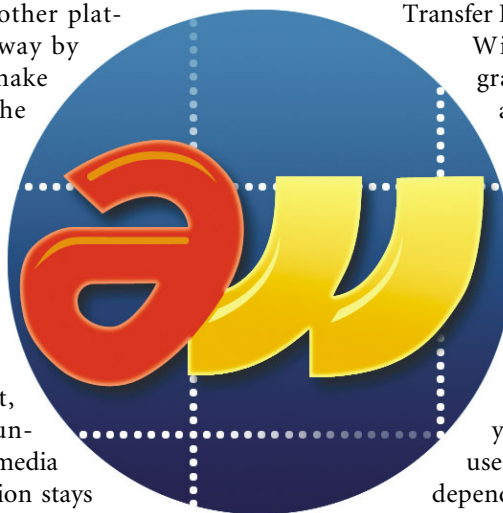
Even if you're a big fan of InstallShield for building installations on Windows and other platforms, you might soon be lured away by InstallAware, which continues to make major strides as a competitor to the well-known InstallShield utility.

According to InstallAware Software (www.installaware.com), the company's utility creates packages that are about half the size of the competition's packages, thanks to advanced compression techniques that pack in plenty of data. Also included is partial Web deployment, which lets you store application run-times or rarely used features in Web media blocks, while the primary setup portion stays self-contained and won't require an Internet connection. This feature works with any Web server supporting

HTTP (Hypertext Transfer Protocol) or FTP (File Transfer Protocol) connections.

With features such as two-way integrated visual/code views, the company also touts its software's ability to simplify the setup authorizing process. Users can define setups in state-based fashion using file, Registry, shortcut, and other visual views, but what's noteworthy is the underlying code view, which updates each time a visual view is used. With a conditionally flowing setup script in the underlying code view, you can create a setup program that uses separate execution paths at runtime, depending on system conditions.

Four editions of InstallAware are available, and prices start at \$199. ■



THE TECH GRAPEVINE

Rumors Making The Rounds



We've heard it before, but the latest rumors surrounding Dell's possible move to AMD sound more convincing than ever. *Forbes* reported that

Dell contacted its Taiwan-based contractors and indicated plans to develop devices based on AMD microprocessors. Further, according to the Chinese-language *Economic Daily News*, Foxconn is already producing AMD-based servers for Dell. Might we soon see an "AMD Inside" label on Dell's home computers?



If you're tired of rebooting after almost every Windows update (and who isn't?), Microsoft seems to have some technology on the horizon that will eliminate those frustrations. The company is said to be

integrating a feature in the upcoming Vista OS called the Restart Manager, which lets users update applications and the OS itself without rebooting. To do this, the Restart Manager will try to clear certain parts of the system so that updates can occur safely without the need for reboots.



Not everyone seems to be jumping on board the concepts behind TrustedFlash, SanDisk's answer to DRM (digital rights management) that embeds music, games, or other content directly in flash cards and includes DRM restrictions (in other words, you

won't be able to copy that content to another drive). But according to Kingston, these cards will then naturally compete with optical media, such as music CDs, and considering that SanDisk's TrustedFlash-enabled Gruvi cards run about \$40, flash manufacturers might have a tough time convincing consumers to switch media formats.



Here's one for all you shredaholics. A recent study by ID Analytics reveals that data breaches usually don't result in actual identity thefts, primarily because it takes so long for thieves to actually perpetrate the theft against

a consumer. From the study: "It takes approximately five minutes to fill out a credit application. At this rate, it would take a fraudster working full-time—averaging 6.5 hours day, five days a week, 50 weeks a year—over 50 years to fully utilize a breached file consisting of one million consumer identities." Of course, we don't think this means that you'll necessarily escape Murphy's Law and not encounter the one thief who decides to focus exclusively on *your* information.



In addition to predicting that global spending on IT will rise by 5.5% this year, IDC also predicts that the "Google effect" will appear.

"A critical new ingredient we'll see is the acceleration of disruptive business models; 'open innovation' in IT product and service development—the open-source effect; and online delivery of IT as a service—the Google effect," says Frank Gens, senior vice president of research at IDC.

DULY QUOTED

"No, I don't think people should cite it, and I don't think people should cite Britannica, either—the error rate there isn't very good."

—Wikipedia founder Jimmy Wales comments on his encyclopedia-like Web site, which drew heavy criticism after a contributor linked, as a prank, former *USA Today* Editor John Seigenthaler, Sr., with the assassinations of John F. Kennedy and Robert F. Kennedy.

(Source: *BusinessWeek*)

CONVERGENT TECH: PDAs & SMARTPHONES

Snapping Pictures & Making Calls Are All The Rage



Camera phones are not only hot now, but they'll be hot later, too. This according to a report from Gartner, in which the market researcher noted that worldwide sales of camera phones reached 295.5 million in 2005, up 14% from 2004.

"The trend for camera phones first took hold in Asian markets such as South Korea and Japan," says Carolina Milanesi, principal analyst for mobile terminals research at Gartner. "It has quickly become a global phenomenon as mobile phone

users around the world have been captivated by the idea of integrating two devices—a digital camera and a phone—in one."

As the price for integrating technology into mobile phones continues to plummet, the worldwide growth of the devices will stay strong, especially as the cost for integrating a 1MP (megapixel) camera into phones cuts in half over the next four years, states the report from Gartner.

Camera phone sales in North America topped more than 70 million

New Products Hardware

Compiled by Kylee Dickey

Quick takes on the latest hardware and software to hit the market at press time. Manufacturers' and publishers' release dates are subject to change, so some products may not be available when you read this. (Logos indicate products are compatible with either Windows or Macintosh only.)

4GB Flash Voyager (CMFUSB2.0-4GB) Corsair • \$259	(888) 222-4346 (510) 657-8747	www.corsairmemory.com	Portable Hi-Speed USB drive with approximately 4GB of storage capacity
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Brick Desktop Hard Drive 160GB LaCie • \$119.99	(503) 844-4500	www.lacie.com	Stackable hard drive that resembles LEGO-style building blocks
 CyberPad Adesso • \$199.99	(800) 467-1195 (909) 839-2929	www.adesso.com	Device that doubles as a digital notepad and digital tablet
Everki Explore Tritton Technologies \$44.99	(800) 431-1176	www.everki.com	A messenger-style notebook case with pouches for sunglasses and a portable media player
Firefly Firefly Mobile • \$74.99 (with a two-year Cingular FamilyTalk contract)	buzzme@fireflymobile.com	www.fireflymobile.com	A cell phone for kids that lets parents restrict both incoming and outgoing calls
GlobalPetFinder GPS Tracks • \$349.99 (plus additional subscription fees)	(516) 938-2121	www.globalpetfinder.com	Attaches to your pet's collar, notifies you of extreme temperatures, and reports a lost pet's location to a wireless device
iPod Battery for iPod mini (BAT-MINI) Sonnet Technologies \$29.95	(949) 472-2772	www.sonnettech.com	Replace your iPod mini's battery yourself
 WinBook A210 WinBook • \$599.99	(800) 254-7806	www.winbook.com	Budget-priced, 15-inch WXGA notebook with a 40GB hard drive

in 2005, representing 47% of total device sales. Western Europe saw similar sales, with 85 million, or 55% of total mobile terminal sales, and that number is expected to rise to 143 million, or 90% of the mobile market, by 2009. In the Asia Pacific region, camera phone sales hit 68 million units, with Japan's sales accounting for almost 92% of total mobile sales.

In areas such as Latin America and Africa, where low-end phones represent most sales, camera phones are

seeing lower adoption rates, but Gartner predicts that by 2009, camera phone sales will significantly increase there, as well.

By 2009, Gartner estimates that the Asia Pacific region will lead all markets in terms of yearly camera phone sales, with more than 270 million units. North America will be next with 146 million, Western Europe closely behind with 143 million, followed by Latin America, Japan, Eastern Europe, Africa, and the Middle East.

Although the Asia Pacific region might lag slightly behind other areas in terms of sales, countries such as Japan and South Korea have a leg up on megapixels. Gartner's report noted that more than 78% of camera phone models sold in 2005 had 1MP or 2MP, and by 2009, almost 50% of the phones will sport more than 3MP.

Outside of these markets, Gartner states that 1.3MP is the minimum standard shipping with high-end phones, and 2MP models will become more commonplace this year. ■

New Products Software

 Advanced Uninstaller PRO 2006 7.5 Innovative Solutions \$39	www.innovative-sol.com/contact	www.innovative-sol.com	<i>Uninstall programs more completely without leaving files behind</i>
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 The Missing Sync 5.0 for Palm OS Mark/Space \$39.95	(408) 293-7299	www.markspace.com	<i>Sync your Palm OS-based device with Mac OS X applications, such as Address Book, iCal, iPhoto, and iTunes</i>
 ReaConverter 4.0 ReaSoft.com \$49.95	info@reasoftware.com	www.reasoftware.com	<i>Digital-image conversion software with support for more than 340 file formats</i>
 Toot! Aurbach & Associates \$35	(800) 774-7239 (314) 726-1321	www.aurbach.com	<i>Design a résumé complete with attached samples of your work saved in digital formats</i>
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 Workspace Macro Pro Automation 6.0 Tethys Solutions \$39.95	(408) 340-1956	www.tethysolutions.com	<i>Use built-in templates to automate common keystrokes and tasks</i>

A Different Breed Of Mouse

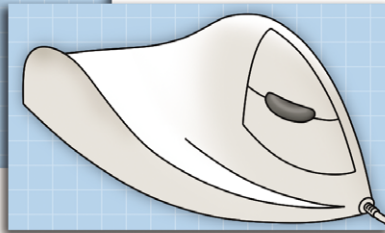
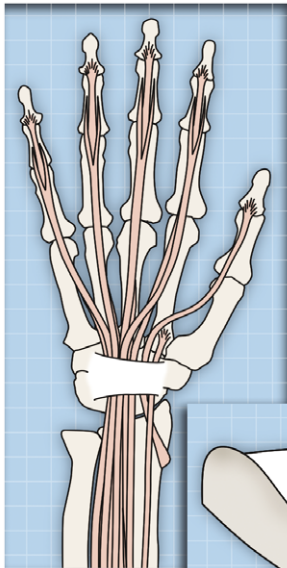
When using the computer, I am very careful to have an ergonomically correct hardware arrangement. I use a wrist rest and keep the keyboard and mouse on a keyboard shelf under my computer table. I use an adjustable chair to guarantee that my body is in the correct position. Yet, perhaps not surprisingly, considering the hours that I spend on the computer, a few months ago, my right wrist started aching.

My solution was the hardware and software combo that I'll tell you about in this TechMates column—two products that when combined really help to relieve wrist stress caused by working with the computer mouse. This dynamic duo of products is also great for people with arthritic hands, dexterity problems, or hand tremors.

First, the hardware. The AirO₂bic Mouse is one truly unusual mouse. It looks like a double mound of smooth, sculptured black plastic. It is reminiscent of a worn down mountain range with two peaks and one valley. It is both longer (8 inches) and taller (3 inches) than a regular mouse. Most people who sit down at my computer don't even realize that it is a mouse. The mound is molded to comfortably accommodate your hand in the handshake position. When you think about it, you realize that your hands are most often in that position when performing natural actions, such as walking. Regular mice force your palm to be facing the desktop, which is a somewhat abnormal, tension-causing position.

With the AirO₂bic Mouse, you rest the side of your hand in the molded area between the two mounds with your palm facing the larger mound. This puts your hand in a comfortable position and gives it something to rest on. With your hand resting on AirO₂bic Mouse, you do not have to constantly grip the mouse or hover your hand above it. This eliminates much of the tension you feel with a regular mouse.

When your hand is resting on the mouse, you can easily extend your fingers to touch both of the mouse buttons and the wheel on the side of the larger mound. The buttons themselves are elongated to accommodate variations in finger size. To move the pointer on the screen, you move your whole hand and the entire mouse. Although this seems awkward at first, it is quite easy to get used to.



AirO₂bic Mouse & Nib Click-Less software
 Mouse alone, \$99.95; with software, \$149.95
 Software alone, \$75
 (866) 936-6873
 Designer Appliances
www.aerobicmouse.com

While I use this mouse to keep carpal tunnel at bay, it is also very valuable for those with arthritis, hand tremors, and other dexterity problems. In fact, the AirO₂bic Mouse is the only mouse commended for Ease of Use by the Arthritis Foundation.

The AirO₂bic Mouse is an optical mouse that offers all the accuracy and durability of other high-end mice. Because it has a USB connection, it can be used by both PC and Mac users. The mouse comes in both black and white, and there is a left-handed version for southpaws.

The addition of the Nib or McNib (Mac version) Click-Less software makes the mouse even more useful. You can purchase the software separately or as a package with the mouse. The Nib software is easy to install. Although it takes some getting used to, it is also easy to use. The software lets you use the mouse without having to click the buttons. I have several friends who have Parkinson's disease and hand tremors who love this option. After the software is installed, if you allow the pointer to hover over a hot link or clickable item for a certain period of time, it will assume that you want to click. The program has a lot of flexibility. You get to set how long you wait before it clicks. It lets you decide whether a left-click or right-click is the default. You can also change the click options whenever you need to. The software includes audio signals that let you know when the clicking occurs.

The Nib software also lets you use simple gesture technology to perform mouse functions and lets you use hotkeys on the keyboard to simulate a click. If you consider the fact that you may click your mouse a million or more times a year, you realize that this can be valuable software. You can use the Nib software with other mice or trackballs, but whether you use it to reduce wrist stress or solve a dexterity problem, it is the perfect TechMate for the Quill mouse on either the PC or Mac. ■

BY SANDY BERGER

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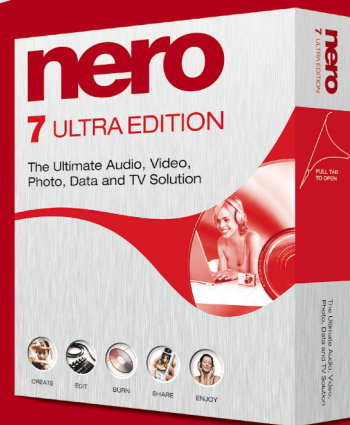
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PCs aren't the only rapidly evolving devices in the electronics world. Only a couple years ago, many budget-friendly portable music players lacked abundant storage space and required special software to help users transfer music from their PCs. But thanks to new designs and features, many of these hassles are history. I reviewed (and liked) iriver's \$179.99 iFP-390T more than a year ago (July 2004), so I recently asked iriver to send me its latest sub-\$200 device, the T10. The difference is notable.

In 2004, the iFP-390T had all the features you could ask for in a flash memory-based player: 256MB of storage, decent software, an FM radio tuner, and easy-to-use buttons. The T10 keeps its predecessor's great features and offers some significant enhancements.

Give Me A Gig

As with hard drives, flash memory prices are dropping while capacities grow. The T10 offers 1GB of storage, which means you can store about four times as many songs on the new model. That's not bad for a device that costs only \$20 more. You can also store documents and other files in the player's Data folder; the device appears in your My Computer folder.

Radio tuners are very popular now, so it's no surprise that iriver kept the FM tuner. You can search for channels manually or let the player search for strong signals. I found that the player picked up all of my favorite stations without any problems, whether I was in the office or on the road. The radio also lets you assign presets to channels, so you quickly can flip among your favorite channels. You can also configure the T10 to record radio to MP3s on a schedule.

Audiophiles will like the EQ (equalization) feature, which lets users adjust audio playback. If you're not familiar with

EQ settings, don't worry. The player has tons of EQ presets, such as Classic, Jazz, and Rock.

iriver also solved the software dilemma. Previous models included iriver Music Manager, a computer program that rounded up your PC's songs and then copied them to your iriver player. This wasn't a bad setup, but people had to learn to use a new music player program. Now, you won't need to install any software at all, assuming you have Windows Media Player 10 (which works only with Windows XP). You can simply plug your player into the PC's USB port, create a list of the songs that you want to put on the player, and then click the Start Sync button. (As it happens, iriver also released firmware for older models that lets them use Media Player in the same way. You can download the updated firmware from the Web site's Support section.)

Still Classy

As with the iFP-390T, the new T10 has a circular directional pad that lets you navigate the menus. However, this pad is flatter than the older model's buttons, which means you're less likely to accidentally press buttons. The player also has a switch that locks all the buttons for the same reason. The device has a built-in clip and a small port for the USB cable that transfers data from your PC.

The color display is new. It lets you easily see text in daylight or in the dark. It can also display pictures that are in the BMP (bitmap) file format, but I doubt you'll enjoy this feature, as the screen is so small. Even with the color screen, the T10 lasts for about 45 hours on a single AA battery.

Compatibility, Compatibility

The T10's PlaysForSure logo is the icing on the digital music cake. If you're planning to download songs from an online music service and then play them on the T10, you can easily find a compatible service by visiting Microsoft's PlaysForSure site (www.playsforsure.com). If you're looking for sweet-sounding tunes and great features, your search is over. ■

Pentax OptioWPi

A Camera You Can Take Swimming

Chad Denton

Send Chad your opinions at
chad@smartcomputing.com



OptioWPi

\$349.95

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www.pentaximaging.com

Digital cameras are becoming so small that they're easy to slip into a pocket and take almost anywhere. Of course, if you spend a lot of time outdoors, carrying around a camera isn't always such a great idea.

Pentax's Optio WPi is a 6-megapixel digital camera that's perfect for outdoor enthusiasts who don't like to be without a digital camera. Like most Optios, the WPi is small enough to fit easily in a pocket. Unlike most digital cameras, however, the WPi is waterproof.

Waterproof, however, can mean different things. Waterproof devices usually have a JIS Class rating. The WPi has a JIS Class 8 rating, which means it can handle depths of up to 5 feet for 30 minutes at a time. The WPi obviously isn't intended for diving excursions, but it should hold up well on snorkeling trips, while hanging out poolside, or hiking in a monsoon.

Lights, Camera, Action

I like cameras with big zooms, but those cameras are usually much larger. The compact size of the WPi offered its own advantages, even if the waterproof shell did limit it to just a 3X zoom. In order to protect the camera from water, the lens has to move entirely within the camera's body.

The lithium-ion battery allowed me to capture 70 to 80 high-quality pictures with red-eye reduction turned on. I did notice that the battery gauge seemed to go from full to empty rather quickly when shooting a lot of pictures.

I could've gotten more battery life if the WPi had a viewfinder, but it's limited to just an LCD (liquid-crystal display). Aside from the extra battery drain, the only time I missed the viewfinder was when taking pictures in bright sunlight. Like most LCDs, the WPi's display washes out in bright daylight.

The LCD has a variety of display modes, one of which includes a histogram. When the histogram is visible, the LCD superimposes yellow pixels over portions of the image that

will come out underexposed and red pixels over areas that will come out overexposed.

Like most point-and-shoot cameras, the WPi contains a number of scene modes that adjust the camera's settings for shooting in specific environments. A Food mode, for instance, saturates colors to make food look more appetizing.

Controls

The WPi does let you adjust white balance, sensitivity, and exposure compensation settings, but advanced users will have to do without aperture control. Again, however, this isn't unusual for smaller point-and-shoot cameras. Normally, you need to go through the menu to adjust these settings (which isn't exactly quick or convenient). You can, however, program the green button on the back of camera so that multiple presses open specific menu options. Pushing the green button once sets the camera to Green Mode, which is a fully automatic mode.

Post Process

The camera also contains a variety of tools for working with images right on the camera. You can crop images, rotate images, and even remove red-eye from images. Of course, you can't always notice red-eye on a 2-inch LCD, so the camera includes ACDSee software for editing images after you transfer them to your PC.

Life Aquatic

I looked at the WPi's little cousin, the OptioWP, as well. I took the camera on a Caribbean snorkeling trip but only managed to get one picture out of it before it died. The review model, however, was likely well-worn by previous reviewers. The WPi I looked at was brand new, and although the scenery at my gym's indoor pool wasn't as picturesque as a Caribbean reef, the WPi held up just fine.

I'm not an image expert, but I was happy with the pictures I got from the WPi. Pentax lists the 6-megapixel OptioWPi for about \$350, while the 5-megapixel OptioWP sells for \$300. ■

Rights Minded

Sony's DRM Raises Many Issues

Kylee Dickey

*Send your comments to
kylee@smartcomputing.com*

The battle over DRM (digital rights management) on CDs, digital music files, software, and other media took on new significance last fall. Previously, much of the debate was about what constitutes fair use. Is it reasonable to make a backup copy of a CD you own? Is it reasonable to include a song on a mix CD for a friend? Is it reasonable to copy a song to a digital music player, so you can listen to your music during your morning jog?

When I first heard about Sony BMG's XCP (extended copy protection), however, I realized that the DRM debate is no longer just about how we may legally use the music we buy. It is also about what a company, such as Sony, can do to our computers in order to prevent copying.

Sneaky Software

The news of Sony's controversial DRM broke on Halloween when security specialist Mark Russinovich of Sysinternals (www.sysinternals.com) announced on his blog that some Sony BMG CDs secretly installed a rootkit, created by software developer First4Internet. A rootkit is software that hides specific logins, processes, files, and data so that users cannot see some actions that occur or files that are on the computer. Typically, rootkits have been the tools of crackers because they let them gain control over systems and avoid detection by common antivirus and anti-spyware programs.

XCP not only hid itself but also cloaked (hid) any files that started with a specific string of characters. Someone could write malicious code and name the file so that XCP would hide the dangerous code. By early November, several Trojan horses circulated that took advantage of XCP's cloaking.

Finally, Sony's EULA (End-User License Agreement) did not specifically explain that the CD would install a rootkit, that the installed software would cloak files, that the

software itself was hidden, or that there was no way to uninstall it. In fact, only very advanced computer users could manually uninstall XCP, but doing so would disable the computer's CD/DVD drive. The EULA also did not disclose when and why XCP phoned home to Sony's servers.

Rootkits can make a computer less stable. If you had XCP on your system and your computer was behaving erratically, you wouldn't know XCP was there. You wouldn't know to troubleshoot it. You wouldn't know to look for a patch to fix the problem, and you wouldn't be able to uninstall XCP.

After news of XCP broke in the media, Sony issued a patch. This patch didn't uninstall XCP. It only removed the cloaking feature. The release of this patch caused only further embarrassment for Sony because the patch itself opened a new, even more dangerous security hole. By the time you read this issue, Sony should have a safe patch available, but in the meantime, many Sony customers' computers were harmed by XCP.

The Road Ahead

I'm sure another company could use a rootkit in a less offensive way than Sony did. For example, the EULA should have explained exactly what XCP was. Nonetheless, rootkits are notorious for causing system instability, and they make it very difficult for the average user to diagnose computer problems. The work I do on my computer is important, and I try very hard to keep my computer as secure as possible. If I were illegally downloading music, I might expect to place my computer at risk from infected files, but I certainly don't expect this to happen when I play a legally purchased CD. I would like to be treated as a valued, paying customer rather than as a potential criminal.

Now that we've seen how far record labels will go to prevent us from copying music, we should all ponder where we will draw the line in the future. Where do the record labels' rights end and ours begin? Is it more important to protect the labels' property (their music) or ours (the files on our computers)? ■

Never Ask For Directions

Trade Your Maps For High-Tech GPS Tools

Nathan Chandler

*Send insights and insults
to Nathan at
nathan@smartcomputing.com*



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Clunky interfaces, inaccurate maps, and idiotic voice prompts have doomed more than one GPS (global positioning system)-powered driving tool. As with all matters digital, though, the products are getting better, and I tested two guidance systems that made me more willing to embrace GPS and less likely to resort to paper maps.

Street Adventures

MapQuest is one of the Web's best-known mapping sites, and the company is expanding its product offerings by teaming with TomTom (www.tomtom.com) to sell the MapQuest Personal Navigation Device. The PND includes a 1GB Secure Digital memory card that's preloaded with maps of North America, so you don't need to connect to your PC until you want to change maps or other setup options.

This model has a 3.5-inch touch-sensitive screen and includes about 30 languages and 50 voices that tell you exactly where to drive. There are several voices that offer directions.

Another standout feature is the display's perspective, which is designed to emulate the view you'd see looking out your windshield—that is, you'll see a horizon line, and objects in close proximity look larger than those that are farther away. Also nice was the rechargeable lithium-ion battery, which lets you carry the 11-ounce unit as you travel on bicycle or by foot.

Setting up the PND was a cinch. The heavy-duty, adjustable arm attached quickly to my car's windshield, and within five minutes, I'd used the touchscreen to enter my first destination. The interface was colorful, fun, and so intuitive that I didn't even bother to crack open the product manual.

Whip Smart Passenger

Like the MapQuest model, Magellan's RoadMate 360 comes with preinstalled maps of North America. The 360 has a full-color

touchscreen, with seven menu buttons and a controller pad to help you make selections more efficiently. Better yet, the RoadMate also has a fold-out antenna, which may improve reception in some areas.

As you begin entering directions, the voice prompt recites each key press aloud, a feature that's sometimes helpful and sometimes annoying. It took a few extra steps to enter my first destination with the 360, as I had to work my way through a frustratingly inane hierarchal menu (region, state, city, and finally, street) to enter the address.

After I typed an address, the device offered several routes (shortest, no freeways, etc.) for my destination, and once I selected an option, I had the option of clicking through each turn to preview my route and eliminate any streets I didn't like, a process that caused the device to instantly calculate a new route. The RoadMate usually displays a traditional top-down perspective, but when you approach a turn, it shows a Split True-View feature that's more three-dimensional.

There were plenty of other features to play with, too, including a trip computer, track recorder, speed indicator, and compass, as well as different map colors. Like the PND, the RoadMate also displays points of interest, complete with phone numbers and full addresses.

Although the RoadMate's list price makes it look much pricier than MapQuest's product, that number is very misleading. You'll find this Magellan product online for well under \$700.

Final Destination

Overall, both units worked well, but they occasionally made it far too confusing to enter certain addresses, a task that admittedly became easier with practice. Both models also sometimes told us to take silly, pointless turns that lengthened our driving times by a few minutes.

However, for the most part, they did their job of guiding us without major difficulty. If you want a navigational tool that's simple to use, MapQuest's version is the way to go; if you crave more features and don't mind a slightly steeper learning curve, consider the RoadMate 360. ■

Get Media Savvy

Put Media Creation Suites To Work For You



Users who want to get maximum value from their rewriteable disc drives should consider investing in media creation software. These program suites provide the tools needed to **burn** (record data to disc) high-quality audio CDs and video DVDs, perform system data backups, edit multimedia content, and execute other media-related tasks with minimal effort. We examined several of the most popular titles to find the best one.

Roxio Easy Media Creator 8

The latest edition of Easy Media Creator supplies ample proof that Sonic Solutions, which purchased Roxio's consumer software line in late 2004, fully intends to preserve the suite as a premiere product in the media creation genre. The media suite, which still carries the Roxio name, delivers a broad array of capabilities that are sure to satisfy experienced media buffs without overwhelming or intimidating inexperienced users just getting acquainted with the concepts of rip and burn.

It all begins with a centralized interface that provides access to the program's features through both a Project pane, which organizes the features into nine intuitive categories such as Audio and Backup, and a Most Frequent Tasks pane, which provides one-click access to—what else?—the most frequently used features. We appreciate that each interface component includes a concise description of what it does. These descriptions virtually eliminate the learning curve, making it easy for us to start using the program as soon as we launched it the first time. We didn't even need to look at the 318-page manual that Sonic provided.

In addition to its centralized interface, Easy Media Creator provides a Drag To Disc tool that stands perpetually ready to help users burn files to disc. To use it, all we

had to do was insert a blank disc in the burner and then start dragging files to the always-on-screen Drag To Disc icon. Easy Media Creator formatted the blank disc automatically and burned the files to the disc. The tool supports the EasyWrite (also known as Mt. Rainier) specification and is backward-compatible with Roxio DirectCD 5.0 or newer. Of course, users can hide the tool if they prefer to keep the Desktop clean.

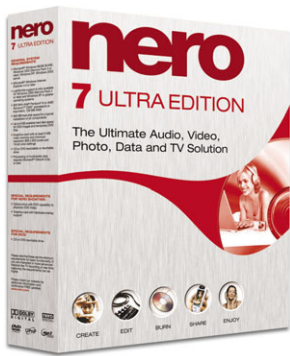
Going beyond these surface elements, Easy Media Creator delivers the type of robust functionality one would expect from a media creation suite these days. Like other media creation suites, it can rip tracks from virtually any source, including LPs and audio cassettes; capture video footage from DVRs (digital video recorders) and other video devices; create audio CDs, MP3 CDs, audio DVDs, and video DVDs; organize and manage collections of multimedia files; as well as develop slideshows and photo projects. In addition, Easy Media Creator resembles other suites in that it can help you design disc labels and sleeve inserts, back up selected files or drives, and duplicate entire discs.

Like Nero 7 Ultra Edition, Easy Media Creator helped us devise custom music CDs complete with track fade-ins and fade-outs, disc titles, volume normalization, and audio tags that identify the tracks when the CD is read by various media player programs. The suite provided the tools needed for editing and splitting individual tracks, enabling us to edit down a compilation that was 12 seconds too long so that it would neatly fit on an 80-minute disc. We also appreciated that the suite could import our existing playlists from Windows Media Player and that it was able to export the final track list to a disc label.

As for video production, Easy Media Creator provides the expected capture and editing capabilities so users can compile video clips; arrange them on a timeline; insert chapter breaks; add text captions, effects, transitions, and an audio track; design a navigation menu; and output the entire production to DVD. The video-editing capabilities are actually quite good, which isn't really a surprise given Sonic's solid reputation for producing professional-grade DVD-authoring software. For

BUYING TIPS

Before investing in a media creation suite, users should review their software libraries to see whether they really need such a suite. Many standalone video editors, media players, photo editors, and backup utilities provide disc-burning functionality, possibly making a media creation suite irrelevant.



instance, the suite gave us the option of creating two video tracks, and it didn't limit our menu-editing options to a bunch of prefab constructs.

So what's not to like? Very little actually. The suite lacks some high-end features found in Nero 7 Ultra Edition, such as support for 7.1 surround sound and Blu-ray high-definition media. But then it offers others, such as support for DivX and concurrent burning of content to two drives (for users who have separate CD and DVD burners installed on their PCs), that users won't find in its primary competitor. Reports of instability may generate concern among our readership, but we didn't experience any instances of it while using the program ourselves. And as with most other programs released these days, free support is available through online channels only (whereas phone-based support costs \$35 per incident).

Nero 7 Ultra Edition

Users can't achieve the complete Nero 7 Ultra experience without spending time on the couch. Why? Because that's where the suite's marquee feature, Nero Home, looks best. This multimedia file management system employs a proprietary database program called Nero Scout to locate and catalog available content into five categories—Audio, Playlists, Photos, Video & TV, and Devices—each of which is identified by a large icon. As long as the PC is hooked up to a television via a TV tuner card, the user can peruse and access the content simply

by zapping on-screen icons with a remote control.

Nero Home is just the latest glamorous feature in a suite packed full of them. Indeed, Nero 7's incomparable capabilities have earned it a reputation as one of the best media creation products on the market. The suite offers 14 robust applications that help users compile customized music CDs, create video DVDs, build slideshows, copy discs, back up data, and design personalized labels and disc sleeves. Plus, the suite boasts several unique extras, including a sample looper, a backup scheduler, Dolby Digital 5.1 and 7.1 surround sound recording capabilities, TV time-shifting capabilities, and support for Blu-ray.

There's only one problem: Users are likely to get lost in the midst of it all. For one thing, the various Nero interfaces leave something to be desired. The StartSmart control panel, for instance, centers around six icons. Unfortunately, none of them are labeled. We had no way of knowing which was which until we rolled the pointer over each of them. We encountered a similar situation when using Nero Home. The identity of each on-screen icon remained a mystery until we double-clicked it. Navigation should be more straightforward than that.

The various creation and editing applications delivered the requisite functionality—and then some—in a no-nonsense fashion. However, we wish Nero would have bundled a hardcopy users manual with the suite, as we found ourselves wanting to look up more information while

Software Information

	Price	Company	Contact Information	URL
Roxio Easy Media Creator 8	\$99.95	Sonic Solutions	(415) 893-8000 (905) 482-5200 (Canada)	www.roxio.com
Nero 7 Ultra Edition	\$79.99	Nero AG	(818) 956-5930	www.nero.com
Pinnacle Studio MediaSuite 10	\$129.99	Pinnacle Systems	(800) 293-2948 (650) 526-1600	www.pinnaclesys.com

Scorecard

	Performance	Features	Ease Of Use	Installation	Support/Documents	Price	Overall Score
Roxio Easy Media Creator 8	5	5	5	5	4	4	4.7/6
Nero 7 Ultra Edition	4	5	4	5	3	5	4.3/6
Pinnacle Studio MediaSuite 10	2	4	3	1	3	3	2.7/6



attempting to use some of the more sophisticated capabilities (printable PDF [portable document format] manuals are available online). For example, we searched high and low for anything that would let us preview a custom audio CD project, but we came up empty-handed. We also encountered a few minor performance glitches, including a skipping and stuttering Nero ShowTime (the utility's built-in media player) while multitasking.

In the end, Nero has too many awkward navigational moments and minor performance hiccups that detract from its otherwise first-rate features.

Pinnacle Studio MediaSuite 10

A program that throws errors at you during its installation is like a new acquaintance who sneezes on you during an introduction. A program that throws errors at you along with an invalid serial code and four discs of program content, well, that's like a new acquaintance who sneezes on you repeatedly, making you immediately run to the nearest restroom to wash your face.

Thus began our experience with Pinnacle Studio MediaSuite 10. And things didn't improve much after that. Once the setup was complete, we flipped through the comprehensive users guides and decided to check out the suite's file management utility, but we couldn't find it. So we headed to InstantDisc, the suite's disc-burning application. We quickly devised a file list, inserted a blank disc, and launched the burn. But 30 seconds later, the application ejected the finalized disc from the drive with nothing recorded on it but a list of track numbers. Not only did that initial disc end up in the trash, but so did the next disc we tried to burn.

We made a call to our company contact and finally received some answers. As it turns out, MediaManager isn't part of the default setup, a fact that we would've noticed in an installation guide if one had been provided. As for the InstantDisc issue, the support technician suggested updating the driver for our disc burner and reducing the burn speed. Neither solution worked and, frankly, it

wasn't worth the effort—or discs—to pursue a fix further.

Of course, file management and music CDs aren't the focal point of Studio MediaSuite; neither are data backups or photo albums. The central functionality of this media suite is Pinnacle Studio, a highly reputable video-editing program that also retails as a standalone application. Pinnacle Studio is more robust than the video-editing applications Roxio or Nero provided, coupling an intuitive interface with support for high-definition editing, multiple audio and video tracks, and even green-screen Chroma Key editing. (The product ships with a large background cloth for proper do-it-yourself green-screen recording.)

But if video editing is all a user needed, why buy an entire suite like this? The fact is our experiences with Pinnacle Studio MediaSuite weren't favorable. The potential is there, but too many bugs and quirks make it impossible for us to recommend the product to anyone.

Media Mayhem

It's possible that users on other systems with other hardware and software configurations will avoid the technical difficulties we encountered with Nero 7 Ultra Edition and Pinnacle Studio MediaSuite 10. But there's no debating Roxio's superiority when it comes to ease of use and depth of features. This head-to-head review wasn't even close: Roxio Easy Media Creator 8 earns our Smart Choice distinction for its media creation package. ■

BY JEFF DODD

BUYING TIPS

Users also should review the media creation tools that Windows includes.

Windows Media Player, Movie Maker, and Backup replicate the key capabilities of a media creation suite—on a smaller scale, of course—and cost nothing at all.



**March 2006
Smart Choice**

**Roxio Easy Media
Creator 8**



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Anywhere in your home, indoors or out, there can be music. Or sports. Or news.

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A Foxy Browser

Firefox 1.5

Free
Mozilla Foundation
(888) 586-4539 (paid support)
www.mozilla.com/firefox



You've probably heard of Firefox, the Web browser that hit the ground running in 1994 and is now the No. 2 browser (approximately 9% of the market vs. Internet Explorer's 86% share as of late 2005).

Firefox is an innovative browser that offers advanced features IE lacks. But it has enough quirks and drawbacks that we wouldn't recommend you use it as your sole browser.

Life On The Open Range

Firefox is an open source project of Mozilla.org and its parent, the Mozilla Foundation. Open-source programs are group-effort projects where the programming code and software are distributed free of charge. As such, Firefox sports an array of tasty features courtesy of the myriad brainiacs who contributed to its creation.

First and foremost for those who like to surf multiple sites at once, Firefox offers tabbed browsing. This approach stacks sites one on top of another in a single interface with a tab marking each site. Click a tab, and the interface brings that site to the top; drag a tab to a new position to change the relative order in which Firefox stacks the sites.

Tabbing is not automatic: When you open a new site, it will replace the one you are currently browsing unless you first create a new tab or a new window. Regretfully, there is also no option in Tabs preferences to have Firefox automatically open all new sites with new tabs.

Another mixed bag for Firefox is its customizable interface. Firefox lets you add or remove buttons on toolbars, create new toolbars, and apply new themes to change the look of your Firefox interface. It also lets you enhance the Search bar with dialog boxes for a variety of search engines ranging from Food Network to Yahoo!igans!.

Those who like to dabble can experiment with hundreds of third-party extensions, each of which enhances Firefox's functionality.

On the downside, Firefox requires customization before you can run many of the files created with common Web applets such as Macromedia Flash and Adobe Acrobat.

Firefox 1.5 will alert you the first time you visit a site that requires a missing plug-in and provide a link to resolve the problem, but installation can be a bit convoluted.

Additionally, by default, Firefox stores downloads on your Desktop. Yet another customization will let you choose where to send your downloaded files.

A Secure Fortress

Firefox is big on security, incorporating virus, worm, and spyware controls and user-customizable pop-up blocking. It also offers a one-click method to clear private data if you suspect your PC is being invaded.

Strong security also means Firefox does not support ActiveX, a common vehicle for malware attacks, but many legitimate Web sites also use it. There is not a plug-in from Mozilla to add this functionality, so you may find yourself unable to load sites that require ActiveX.

Performance Problems

We found Firefox, in its default configuration, to be a bit faster than IE. The trade-off is that it often uses more memory than its competitor. Some users report serious memory leakage problems that cause crashes. Memory leaks are hard to diagnose and largely system dependent. Our recently tuned Windows XP machine ran fine with Firefox, but users should be alert for problems.

Play With Fire

Firefox is an intriguing program that will appeal to anyone who likes to tinker. However, it may frustrate those who like their browsers simple and straightforward. Furthermore, because Firefox is open source, there is no official company support. (Help files and user forums are quite extensive, and there is a paid support line.) Bottom line: The browser itself is free, so you can use it indefinitely without making a final decision. ■

BY JENNIFER FARWELL

Scorecard

Performance 4

Ease Of Use 5

Installation 4

Documentation 3

Price 5

Overall Score 4.2 / 5

AlarmWiz 2.1

\$24.95

AcroVista Software
www.acrovista.com



Scorecard

Performance 4

Ease Of Use 5

Installation 5

Documentation 3

Price 5

Overall Score 4.4 / 5

Photo Finale Premium

\$49.95, boxed; \$39.95,
download

Trevoli
www.trevoli.com
/supportform.aspx
(email support form)
www.trevoli.com



Scorecard

Performance 3

Ease Of Use 3

Installation 5

Documentation 3

Price 4

Overall Score 3.6 / 5

A Friendly Reminder

Based on its title, AlarmWiz would appear to be a reminder program. In reality, it straddles the line between the reminder tools in programs such as Outlook and full-fledged task scheduling and automation programs. It's a nifty, combined task reminder/motivator utility that is perfect for road warriors who are also hopeless procrastinators.

Using AlarmWiz, you can set reminder alarms for events and prompts for tasks. Alarms can be audible or silent—AlarmWiz can play the WAV or MP3 file of your choice or launch a CD, and/or it can display a flashing alert with the text of your choice. (AlarmWiz does not support Windows Media file formats, so you'll need to convert files you ripped or downloaded.)

To further encourage you to get moving, AlarmWiz can execute programs, launch your browser, upload or download files using FTP (File Transfer Protocol), or send emails.

Each action requires a separate alarm, but you can set them close together so they occur

consecutively. You can also set them to occur once or to repeat indefinitely at a variety of regular intervals or on specific dates you choose. AlarmWiz lets you create an exceptions list for those times you don't want its help, and it offers a user-configurable Snooze Button if you want to temporarily postpone tasks or reminders.

For the road warrior, the possibilities are endless. Wake to your favorite CD and then have AlarmWiz launch Outlook, connect to the Internet, start Microsoft Word or Excel, and send a reminder email to your associates about the morning meeting. By the time you emerge from the shower, your messages are waiting and you can get straight to the tasks at hand. One warning: After you run it the first time, you cannot open it from the Programs menu (it keeps running minimized if there are upcoming alarms). To open the interface, right-click the icon in your System Tray and click View Alarm Window. ■

BY JENNIFER FARWELL

Graphics Utilities

File Your Photos

Into the crowded pack of entry-level photo organizers/editor combos comes Trevoli's Photo Finale. The product targets novice digital camera users with a streamlined interface and basic functionality. However, it may lack enough functionality to satisfy budding digital enthusiasts.

Photo Finale incorporates a six-button startup display (which you can disable) that opens one of several wizards. We found these wizards to be inflexible and lacking. For example, selecting the Fix button opens a photo-editing display that lets you manually perform certain edits but not others and excludes all of Photo Finale's auto-fix tools.

Once you've moved to the main Photo Finale interface, you'll find an array of options. The program offers a button option that lets you import images from your entire system, a particular drive or folder, a scanner, or a digital camera. Once images are imported, you can view them by date (Photo Finale records their file dates and displays the dates on a

calendar) or organize them by a handful of categories such as People, Places, Events, or categories you create.

Photo Finale also offers a number of editing buttons, plus buttons that let you print or email images or create slideshows, album pages, or greeting cards from them. (You can also share your images online, but you must sign up for a free or premium membership to do this.)

Not all of Photo Finale's editing and processing options—including the powerful batch process feature—are present on its button menu, despite the fact that there is plenty of room. Furthermore, you cannot choose which features you want Photo Finale to display as button options. The overall effect is of a program that means well and offers a reasonable feature set but is not sure how to organize it effectively for best use. That summation precisely matches our opinion of the program. ■

BY JENNIFER FARWELL

Digital Blueprints

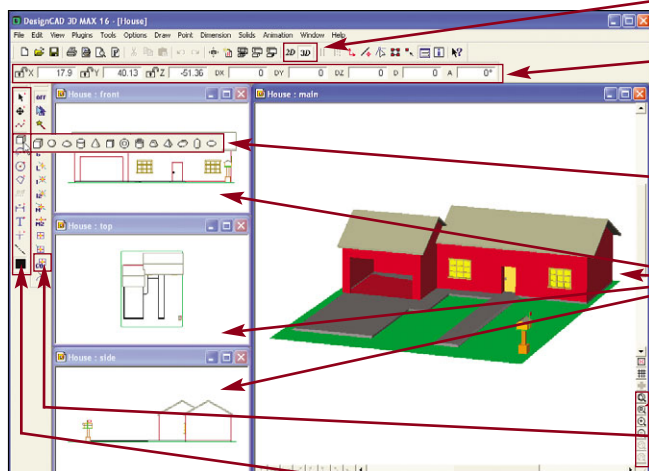
DesignCAD 3D Max vs. SketchUp

Whether you're designing your next home or just a simple bookcase, a 3D drawing program can help with the planning process. Two popular packages are DesignCAD 3D Max (\$99.95; www.imsisoft.com) and SketchUp (\$495; www.sketchup.com). Due to

the difference in price between the two products, we expected to see vastly disparate features. Surprisingly, though, both programs include many similar features. The main difference is the user interface. SketchUp's interface made it look like the

DesignCAD 3D Max

Learn The Basics



Toggle between 2D and 3D to see various aspects of your drawing.

The Coordinate Bar shows the cursor's current location and also displays the distance moved from the last point set as DX, DY, and DZ. (DZ is not displayed in 2D mode)

If you click and hold a tool menu, it will expand to offer more options.

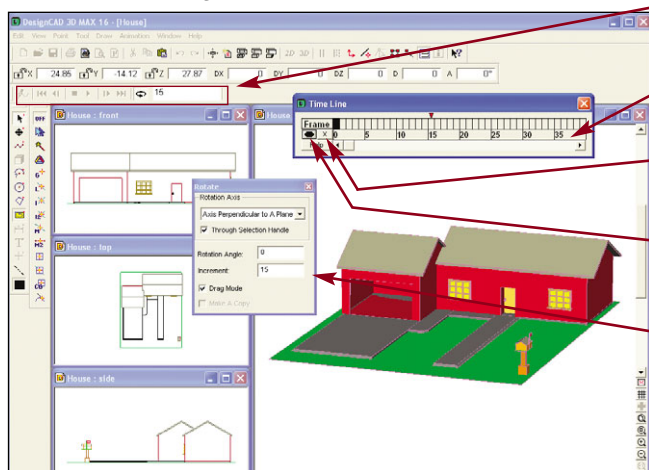
By default, DesignCAD 3D Max provides four views of your drawing: Front, Top, Side, and Main.

See your drawing up close using the Zoom tools.

The Center Of Gravity tool helps you find the point where the mass of an object is equally balanced.

Basic drawing tools, such as Line, Box, Arc, and Circle, are located in the Main Toolbox.

Animate Your Drawing



Animation playback controls reside below the Coordinate Bar.

To animate a design in DesignCAD 3D MAX, you'll first need to layout the frames for your animation using the Time Line.

If you set an incorrect key frame, remove it with the Delete A Key Frame button.

Once you've changed your drawing and are ready to mark the next frame, click the Record A Key Frame button.

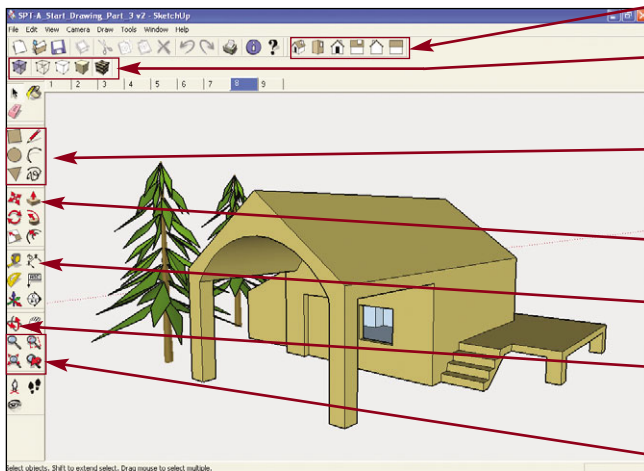
Use the Rotate menu while in Animation mode to change the perspective of your drawing.

more economically priced program: It was very basic compared to the main screen of DesignCAD 3D Max. But simplicity and ease-of-use are actually two of SketchUp's strengths. While DesignCAD 3D Max offers a multitude of features, they aren't as easy to figure out without reading the

users manual. In the end, though, what really matters is what you intend to use the software for and your experience with CAD (computer-aided design). DesignCAD 3D Max has more of a specialized program feel, whereas SketchUp offers more simplicity and three tutorials to help you get started. ■

SketchUp

Learn The Basics



View six angles of your object: Iso, Top, Front, Right, Back, and Left.

Use the X-Ray, Wireframe, Hidden Line, Shaded, and Shaded With Textures options to see varying views of your drawing.

Basic tools, such as Rectangle, Line, Circle, Arc, Polygon, and Freehand, are available from the main screen.

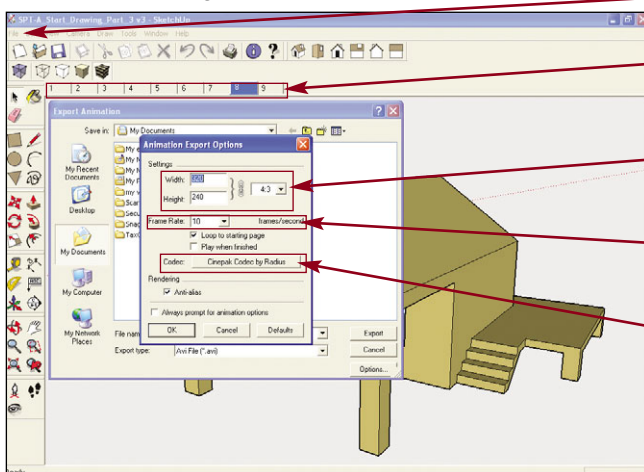
Stretch any 2D object into a 3D object using the Push/Pull tool.

Add measurements to your drawing with the Dimension tool.

The Orbit tool lets you rotate your object on the X-, Y-, or Z-axis by moving your mouse.

Look at your drawing with varying degrees of detail using the Zoom tools.

Animate Your Drawing



To create an animation, click File, Export, and Animation.

To animate an object in SketchUp, you'll first need to create various views using ordered tabs.

Select the size of window and aspect ratio you want to use when viewing your final animation.

The Animation Export Options window lets you select the Frame Rate of the animation.

Change the Compressor used to create your Animation using the button next to Codec.

IMPULSE ITEMS

Compiled by Joshua Gulick

Cool Stuff For \$25 Or Less

See it, like it, buy it.

Impulse Items are products that quicken your pulse and capture your attention but won't make you dig too deep into your wallet. Check these pages each month for the latest interesting and inexpensive computing items we've run across.

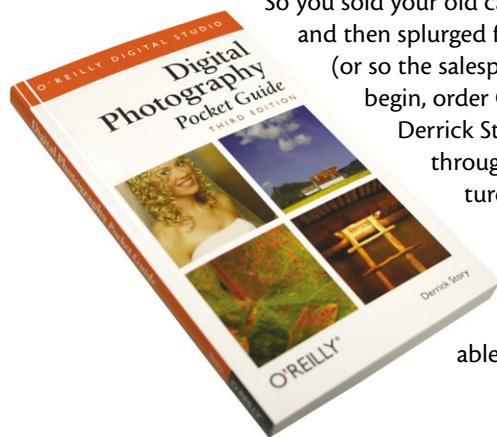


CD/DVD CLEANING KIT

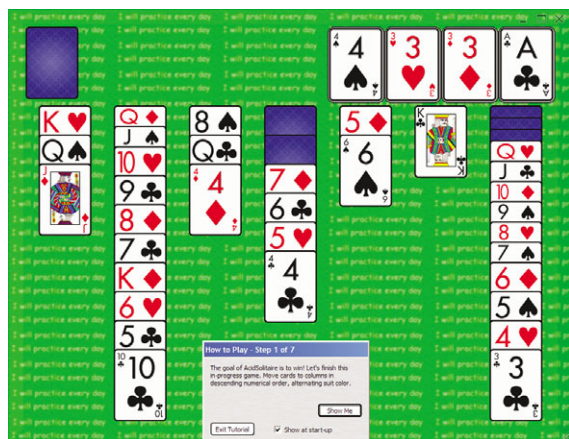
If you have a finicky DVD player or rent movies often, you'll like this Memorex All-In-One CD/DVD Cleaning Kit (\$19.99; www.memorex.com). The kit includes 10 special cleaning cloths, a disc that cleans the inside of your CD or DVD player, and a scratch remover. The OptiFix uses a special (included) solution to remove scratches from both CDs and DVDs. Memorex doesn't sell the kit directly

from its Web site, but it is available via some computer stores and online retailers. You can also find OptiFix Pro Refill Kits (which include extra pads and solutions) online for \$11.99.

DIGITAL PHOTOGRAPHY POCKET GUIDE



So you sold your old camera on eBay for a fraction of its original price and then splurged for a new digital camera that has tons of features (or so the salesperson said). Now what? If you're not sure where to begin, order O'Reilly's Digital Photography Pocket Guide by Derrick Story (www.oreilly.com). The book walks you through the process of learning about your camera's features and then using the camera to get the kinds of shots you've always wanted to take, such as landscape and group pictures. It also offers some great information about sharing your digital photos—online and in slideshows. The book is available for \$14.95.



ACIDSOLITAIRE

We always keep an eye out for a true challenger to Windows' time-killing standby, Solitaire. As it happens, Red Mercury's new AcidSolitaire (www.red-mercury.com) is so much fun that it may just replace the older game in your daily routine. The game boasts several fun extras that let you get more out of your hand. For one thing, AcidSolitaire includes Deal 1 and Deal 3 modes (which deal one and three cards, respectively). It also always produces a winnable hand and offers a statistics feature that lets you see how many hints you used in the last game and the number of wins and losses you've racked up. AcidSolitaire saves games, which means you can quit in the middle of a game without losing. Try AcidSolitaire free for 15 days and buy it for \$19.95. The game supports Windows 2000/XP.



PRO GLO SURGE PROTECTORS

The more computer components we stack on top of our desks, the more power cords pile up below. If your devices outnumber your surge protector outlets, take a look at the Pro Glo surge protectors (\$6.99; www.bytesngrins.com). The devices come in Diva Pink, Dare-Me Orange, Macho Blue, and Passion Purple. Unlike high-end surge protectors, these four-outlet units don't include insurance, so we recommend plugging inexpensive devices, such as speakers,

into them, rather than your computer. Find the surge protectors in Bytes 'n Grins' Fun Desk & Office Stuff section.

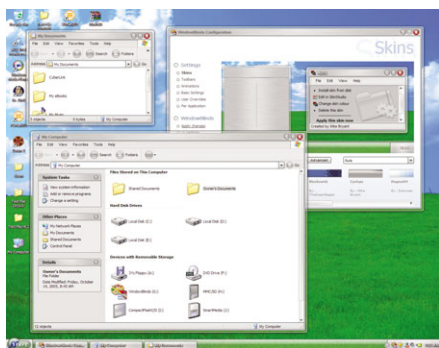


SKINIt

Spice up your electronics with the new SkinIts (www.skinit.com), brightly colored vinyl stickers that can transform your iPod or mobile phone into a work of art. The site has hundreds of designs that range from elegant to, well, leopard print. SkinIts cover PDAs (personal digital assistants), mobile phones, digital music players,

portable video games, and more. If you can't find the perfect design on the site, you can make your own by uploading a digital photo to the site's serv-

er. According to SkinIt, the stickers aren't permanent; you can remove them at any time. SkinIt will create and custom-cut a sticker from your photo. Most skins are available for about \$9.95, and the sticker site ships orders free worldwide.



WINDOWBLINDS 5

Windows XP has some basic features that let users customize the Desktop and Explorer windows, but if you want to make your system really fancy, you'll need some extra software. Enter Stardock's WindowBlinds (www.windowblinds.net), a robust Desktop personalization program that lets users change the Taskbar, Start button, Explorer, and Internet Explorer windows, among other interfaces via the program's collection of Desktop skins. Users can also

change program animations, such as the animation that displays a file flying from one folder to another during file transfers. WindowBlinds supports WinXP. Enjoy the streamlined version free or buy the full version for \$19.95. Users of WindowBlinds 4 can upgrade for \$15.



DOCK ADAPTER FOR IPOD SHUFFLE

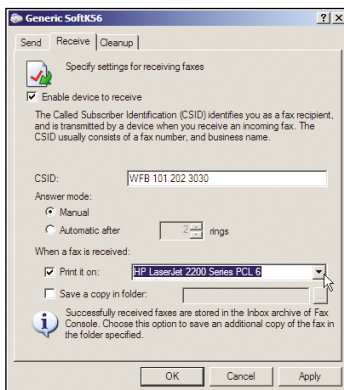
Thanks to Belkin's new adaptor (www.belkin.com), you can plug your Apple iPod shuffle into many of your old iPod accessories. The shuffle has a USB port instead of the dock port that standard iPods have, so Belkin created an adapter. It lets the shuffle plug into FireWire and USB cords that have the dock connector, as well as Belkin iPod accessories, such as the Battery Pack and TuneBase. The little adapter attaches to your shuffle's USB connector. Buy the adaptor for \$19.99.

Receive Faxes With Windows XP

Last month, we showed you how to send a fax from your computer via Windows XP's built-in (but not automatically installed) Microsoft Fax program. So it seems only natural that this month we'd cover using Microsoft Fax to receive faxes.

While sending faxes with Microsoft Fax is something any user with a phone line can conveniently accomplish, receiving faxes with Microsoft Fax is much more practical if you have a second, separate phone line—and phone number—for your computer only. This isn't to say you can't receive faxes on a line you share with your telephone—you can, and in this article, we'll show you how. But we'll also explain why, if you receive faxes with any frequency, you will almost certainly want a second phone line (and will almost certainly be able to justify investing in one).

Also, this article assumes that you've already installed the Microsoft Fax program and connected your computer's fax modem to your phone jack, as described in last month's article. Note also that you must have a dial-up connection to use Microsoft Fax.



Choose Manual answer mode if your computer and telephone share the same line and number.

button, and the Receive tab.

Select the Enable Device To Receive box. In the CSID (called subscriber identification) box, enter the information you want a fax sender to receive with his fax delivery confirmation receipt. Typically, a short version of your name or company name and your fax number will suffice.

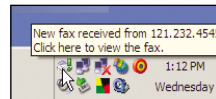
The Answer Mode you select will depend on whether you have a second, dedicated phone line and number for your computer. If you do, choose Automatic (After); this sets the computer to automatically answer

the call and receive the fax after the number of rings you specify in the adjacent box.

If you don't have a second phone line and number for your computer only—that is, if your computer and your phone share the same phone line and number—choose Manual. As you'll learn later in the article, this mode gives you the choice of deciding whether to answer each incoming call as usual, using the phone, or as a fax, using the computer.

The remaining settings are optional, but may prove useful if you receive lots of faxes. Choose Print It On and select the appropriate printer in the adjacent box

to have Microsoft Fax print your incoming faxes as they arrive—like an actual fax machine—so you can read your faxes without having to go to your computer. Opt to Save A Copy In Folder and specify an easy-to-find folder in the adjacent box, and Microsoft Fax will save a copy of each incoming fax to that folder. When you're finished setting options, click OK and start waiting for faxes.



An exclamation point on the Fax icon tells you your fax has arrived; point at the icon and click to view the fax.

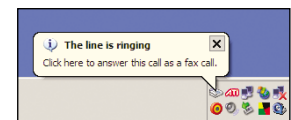
Programmed To Receive

To set Microsoft Fax to receive faxes, click Start, choose Control Panel, click Printers And Other Hardware, and click View Installed Printers Or Fax Printers. Right-click the Fax icon and choose Properties; in the dialog box that appears, click the Device tab, the Properties

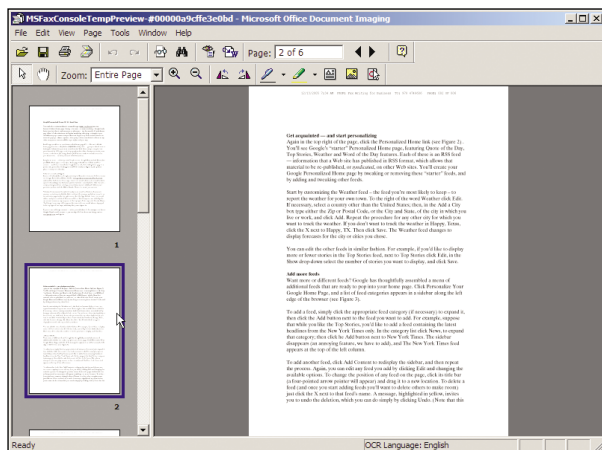
When The Fax Arrives

What you see on screen when a fax comes in depends on your answer mode. In Automatic mode, you won't see anything until the fax transmission is complete. For a few seconds after the fax arrives, the Fax icon in the System Tray will display a bubble you can click to view the fax. Once the bubble disappears (or if you miss it), you'll see a green exclamation point on the Fax icon. Point at the icon to display the receipt confirmation and then click to view the fax.

Manual answer mode is a bit more, well, manual. When any call comes in over the shared line, a different bubble pops up from the Fax icon. If you're not expecting a fax, then you're probably getting a phone call: Just pick up the phone, and the bubble will go away. If you *are* expecting a fax, click the bubble; the Fax Monitor appears to track the fax's progress as it arrives. Once the transmission is complete, a



In Manual answer mode, you must tell Microsoft Fax if each incoming call is a fax (by clicking) or a voice message (by picking up the phone).



If you have Microsoft Office XP or 2003, the Fax Console opens your faxes with Microsoft Office Document Imaging.

second bubble pops up from the Fax icon, inviting you to click and view the fax (if you miss the bubble, click the exclamation point icon).

In either mode, if you set Microsoft Fax to print your fax, the fax will begin printing as soon as the transmission is complete—unless your printer isn't turned on, in which case the fax will be added to the printer's queue and will print the next time you turn on the printer.

In either case, when you click the Received bubble or icon, you'll be whisked to the Fax Console program's Inbox, where you can find your fax and double-click to open it. If you have Microsoft Office XP or newer, Fax Console will open the fax using Microsoft Office Document Imaging, which provides all sorts of tools you can use to view, annotate, and print the document and even convert it to an editable Microsoft Word document (see sidebar). Otherwise, Fax Console will open the fax in Microsoft Picture And Fax Viewer, where you can view and print the fax.

The Manual/Single-Line Blues

A key part of receiving faxes in Manual mode over a shared phone line is knowing whether any given incoming call is a fax or a phone call. If you guess wrong, either you or your caller will get an earful of piercing electronic squeals; if you're not at your computer for a fax call, the squeals will be waiting for you on your answering machine.

It follows that if you're going to use Manual/single-line mode, you need to prearrange the fax time with the sender. You also need to avoid unwanted and unexpected faxes: Don't list your phone number as a fax number in the phone book or on your stationery or business cards,

and tell those who know your phone line doubles as a fax line that they need to call you before sending a fax.

It also follows that if you need to receive more than a few faxes per week—or you'd like to offer business contacts the ability to fax you at will—you need a more practical solution. You *could* purchase a fax machine that works with your answering service and that automatically recognizes and separates faxes and voice calls. But if you already own a scanner and a printer, you should at least consider getting a second phone line exclusively for your computer. The cost may be less than you think: Because most homes are wired for a second phone line, second-line setup is often nominal or free, and if you don't send many faxes yourself, you can probably get by with an inexpensive flat-rate local line. For the extra \$20 or so per month, you'll get the hands-off fax reception without the paper jams, ink outages, and other mechanical failures for which fax machines are deservedly famous, as well as the convenience of having a digital record of every fax you receive (or send). ■

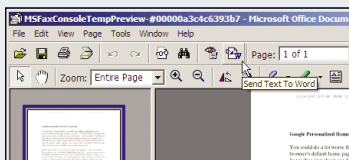
BY MARK SCAPICCHIO

Convert Your Fax Into Text

If you have Microsoft Office XP or 2003, you have Microsoft Office Document Imaging and, with it, the power to convert most any fax you receive via Microsoft Fax into an editable Microsoft Word document.

To do so, open the fax in Microsoft Office Document Imaging. If you want to convert only specific pages of the document, hold down the CTRL key and click the page thumbnails (in the left pane) to select them. Then click the Send Text To Word button. Specify the pages you want to convert and the folder (usually My Documents) to which you want the resultant Word file saved. Click OK twice. In several seconds, Word will open a document containing the text of your fax.

Because the conversion program can't tell the difference, it will include each fax page header within your text. Formatting and formatted characters may not be



In Microsoft Office Document Imaging, click to convert a fax to an editable Microsoft Word document.

converted accurately or completely. And faxes of documents with complex layouts may require some rearranging for proper text flow. But it sure beats retyping. ■

Windows XP File Encryption

These days, it's hard to sit down in front of a computer without thinking about privacy concerns, so it's nice that one of the features in Windows XP Professional (but alas, not WinXP Home Edition) is the ability to encrypt files to protect them from prying eyes. While encrypting important or sensitive files won't protect you from most online threats, it can still be useful in certain situations. It's particularly valuable for those using computers that are at high risk of being lost or stolen, and it can also help keep files private on shared systems.

To keep WinXP's file encryption feature as hassle-free as possible, it's designed to operate entirely behind the scenes. Encrypted files are associated with your user account, so while you're logged in, encrypted files are automatically decrypted before use and re-encrypted afterward. This means there's no need to enter any special passwords to access your protected files, and you don't have to worry about decrypting files and then inadvertently leaving them unprotected.

You can choose to encrypt either individual files or entire folders, though generally speaking, it's preferable to stick to the latter. To make encrypted data easier to manage, it's best to designate one or more specific folders to encrypt and then place all your sensitive files within them. (In addition to the requirement of Windows XP Professional, the other prerequisite for file encryption is that your hard drive must be formatted with NTFS [NT file system].)

Encrypt & Decrypt Data

Navigate to a file or folder and find an item you want to encrypt. Next, right-click it, select Properties, click the Advanced button, put a check mark in the box labeled Encrypt Contents To Secure Data, and then click OK.

If you're encrypting a folder that contains data, you'll be prompted to specify whether you want to encrypt the existing files or subfolders already within. Regardless of whether you choose this option, any new files or folder you create or put inside the encrypted folder will automatically become encrypted.

The time needed to perform the initial encryption will depend on the size of the file or folder, as well as the speed of your system, and can range anywhere from seconds to minutes—it could potentially take as long as an hour or more in the case of extremely large amounts of data (500MB or more). Keep in mind that enabling

encryption does add some system overhead and might slow down your performance somewhat while working with encrypted files, but the effect shouldn't be very noticeable unless your system is quite old.

Once a file or folder has been encrypted, it will appear in green when you list it in Windows Explorer or My Computer, and although unauthorized users will be able to view the list of files in an encrypted folder, any attempt to open one will be met by an Access Denied message.

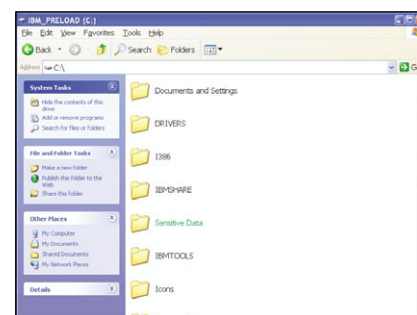
If you decide you no longer want a file or folder to be encrypted, repeat the process above, but this time, deselect the Encrypt Contents To Secure Data checkbox. Typically, only the person who originally encrypted data can decrypt it—not even a computer's administrator can remove encryption from another user's files. (There are certain exceptions to this rule in corporate environments, but they're beyond the scope of this article.)

A Word To The Wise

When you encrypt files in WinXP, keep a few caveats in mind. It's critical your user account have a strong password. When the proper user is logged in, all encrypted data is automatically decrypted as needed, so using an account without a password negates your protection. Similarly, using a

simplistic or easy-to-guess password increases the odds that someone could log in to your account and access your encrypted data. For this reason, use a strong password at least eight characters long and include both lower- and uppercase letters, as well as at least one number.

We mentioned earlier that files are automatically encrypted when you add them to an encrypted folder, and it's also important to remember that the reverse is true, as well. If you move a file out of an encrypted folder, it will lose its encryption. For more information, subscribers can go to www.smartcomputing.com/scmarch05/encrypt. ■



Encrypted file and folder names are displayed in green in Windows Explorer.

BY JOSEPH MORAN



Q & A Board

Q & A Board

We all know how great technology and computers can be. But when you have a computing problem, finding answers can be a frustrating task. So if you can't find a solution to your computing question or problem, consult the *Smart Computing* Q&A Board. This subscriber-only feature is a great resource that allows you to post questions and search archived board messages so you can get quick and helpful responses to all of your computing problems.

Before posting a Q&A Board message, be sure to check out the Tech Support Center and all of its extensive resources, including an error message search, solutions knowledgebase, and troubleshooting articles.

It may also be helpful to utilize the Q&A Board search at the bottom of the page because more than likely, the same tech-related woes you are experiencing have befallen another computer user. You can search by message number or keyword and sort your results by relevance or a specific date range to make finding answers fast and easy.

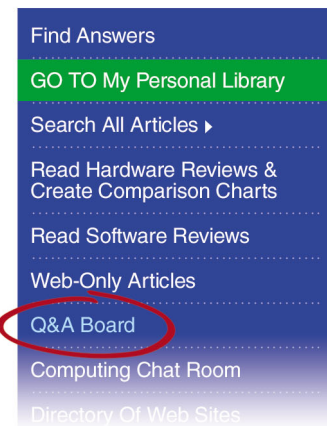
SmartComputing.com

Find answers fast . . . your way, the no-hassle way!

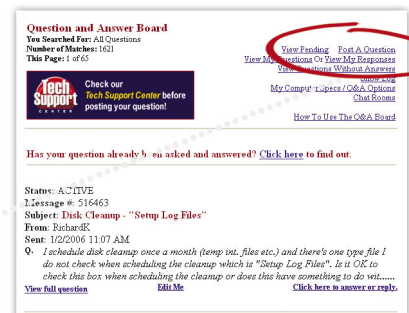
- Customizable Article Search Tool
- Access To Current & Past Issues
- Searchable, Plain-English Dictionary
- Interactive Q&A Board
- Tech Support Center

How To Post A Question

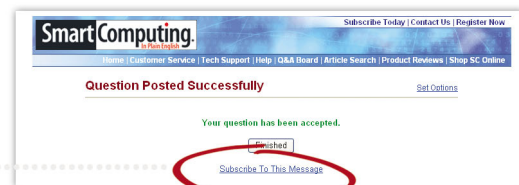
- 1 Log on to SmartComputing.com and click the Q&A Board link.



- 2 To ask your question, click the Post A Question link in the upper right of the page. (Make sure you are logged in to the site.)



- 3 Use the [Subscribe To This Message](#) link at the bottom of the question to be notified via email when answers are posted.



Compiled by Sally Marek Curran
Graphics & Design by Jason Codr

Out Of Darkness

Night Vision Devices Light Up The Night

Let's say you have new neighbors who, for the past week, seem to have been digging their very own Panama Canal in their backyard. In the middle of the night and in the rain, no less. Naturally, you're curious, but those binoculars just aren't cutting it in the dark. Enter night vision devices.

On its own, the human eye needs about 30 minutes to provide optimal (for humans, anyway) night vision. But night vision goggles help humans see far more than they ever could otherwise, even after this 30-minute acclimation period.

Of course, these devices provide an eagle eye to others besides those

of us who are curious neighbors. The military, police departments, researchers, and hunters all reap great benefits from night vision devices. And those benefits are likely more legal than those a, um, Peeping Tom might snare.

Two Means Toward The Same End

There are two main varieties of night vision technology: **image intensifier** and **thermal imaging**. Both will provide about the same results, just via divergent paths.

Increase The Intensity

Image-intensifier, sometimes referred to as image-enhancement, technology provides an image by gathering small amounts of light that's imperceptible to the human eye from the lower end of the infrared spectrum and then amplifying that light several thousand times. The resulting image displays in shades of green (similar to images broadcast from war zones) because the human eye is most sensitive to that

color and can distinguish more shades of green than any other color.

There are five generations—0 through 4—of image-intensifier night vision. The U.S. military currently uses Generation 3. Cats, dogs, and deer have night vision that works based on the same principles; scientists believe these animals' capabilities lie between Generation 1 and 2.

Original Image



Photons

Photo Cathode →

Electrons

Microchannel Plate →

1

After the lens captures light, it's sent to an image-intensifier tube. This tube contains a **photocathode**, which converts this light energy, or photons, into electrons.

The Heat Is On

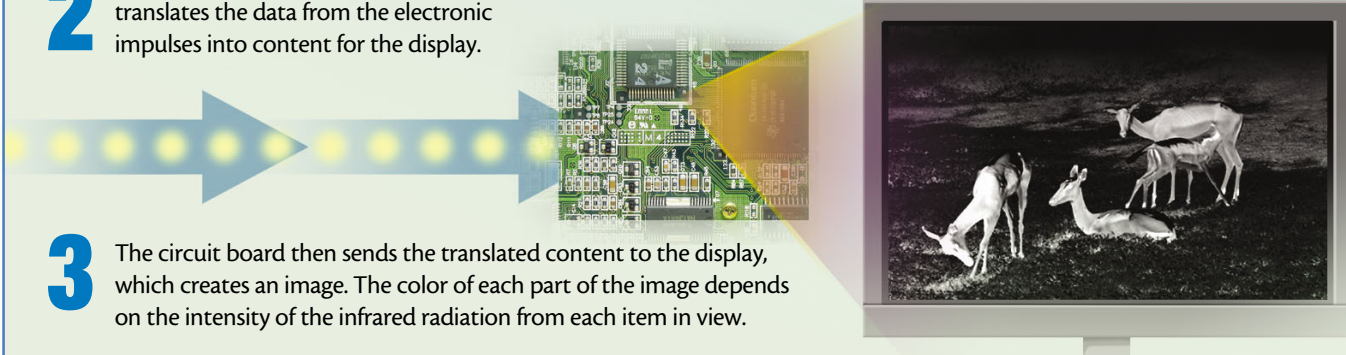
Thermal imaging, or infrared radiation, is dependent upon the upper end of the infrared spectrum, which emits heat, as well as light. This heat is then used to create an image. Some snakes find their way through the dark by sensing a source of heat and the distance to it. Although this flavor of night vision is less

common than the image-intensifying technology we described earlier, it does have two main varieties: uncooled and cryogenically cooled. The former is more common, yet silent, and it activates immediately, whereas the latter is more expensive and yields a much more detailed image.

- 1 A lens gathers infrared light (remember, this is heat, too) from every object in its range and creates a **thermogram** (a temperature pattern) from the focused light. The thermogram is then converted into electronic impulses.



- 2 A circuit board that contains a chip translates the data from the electronic impulses into content for the display.

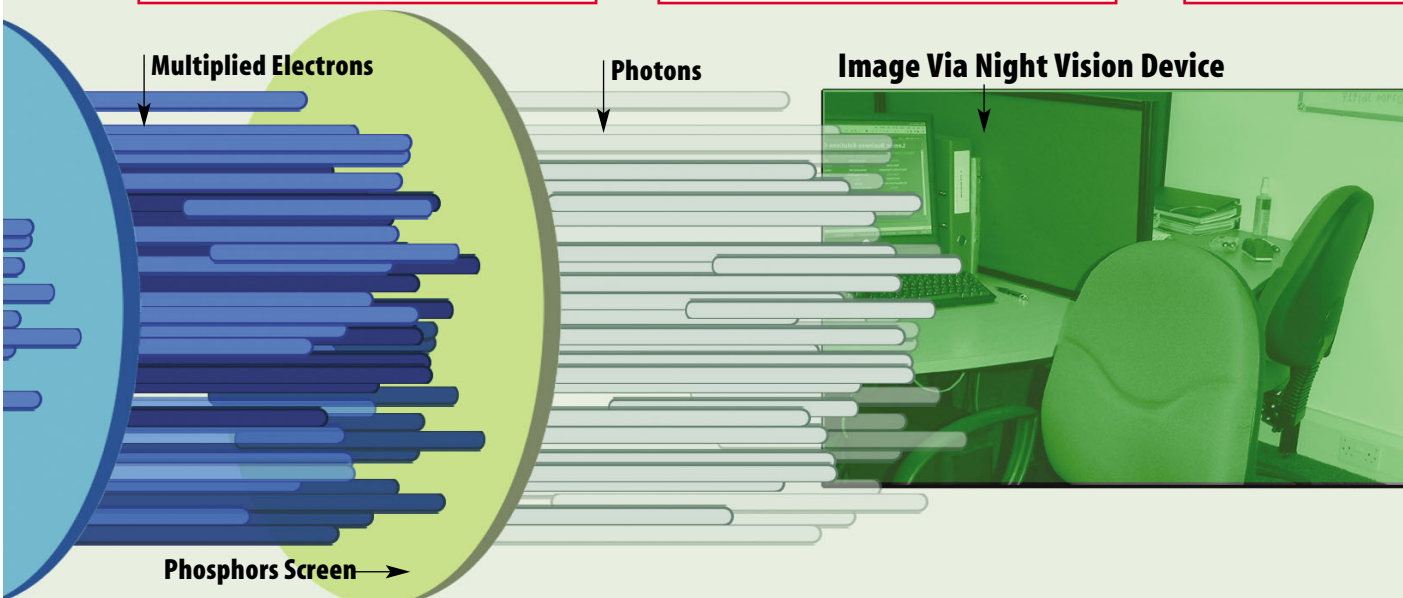


- 3 The circuit board then sends the translated content to the display, which creates an image. The color of each part of the image depends on the intensity of the infrared radiation from each item in view.

- 2 The electrons pass through the tube, and as this happens, the tube releases similar electrons with the assistance of a microchannel plate. This causes a chain reaction whereby many thousand times more electrons exit the tube than originally entered it.

- 3 These electrons collide with a phosphors-coated screen at the end of the image-intensifier tube. As the electrons maintain the same position as they did when they entered the tube (and have an alignment similar to the original photons), a distinct image is the end result.

- 4 The phosphors then release photons, creating a green image that's visible through another lens, so you can focus and amplify it.



Add A Mac To The Mix

Making Mac Part Of Your Computing Family



How could you, a lifetime PC user, suddenly end up owning a Mac? Well, perhaps you've coveted a Mac for years but couldn't quite get past the price (an obstacle obliterated by the new Mac mini—a jewelry box of a computer that costs as little as \$499 and works with your existing PC keyboard, mouse, and monitor). Or maybe you've decided that you can't possibly own one more computer that requires continual security patches, antivirus updates, spyware scans, and firewall reconfigurations. We're not saying the Mac is 100% maintenance-free; after all, Apple has released a handful of OS (operating system) updates since it released OS X 10.4 in 2004. But as this article went to press, the computing world knew of exactly one virus and just a handful of spyware threats that target OS X, which makes the Mac a very attractive option.

Whatever your reasons, if and when you buy a Mac, you'll almost surely need to use it alongside at least one PC. In this article, we'll discuss the extent to which your Mac can share the PC-related investments you've already made—everything from your mouse, keyboard, and monitor, to your existing Internet connection, to your printer, and to your emails and other important files.

Co-opting PC Peripherals

Any Mac sold today works with virtually any USB printer, keyboard, or mouse (including a cordless keyboard or mouse with a USB transmitter). It works with any CRT (cathode-ray tube) or flat-panel monitor—optimally via a DVI (Digital Visual Interface) connection (the white connection port included on most newer monitors)—but it also works via a VGA (Video Graphics Array) connection (the blue monitor connection port familiar to most PC users). To connect to a monitor using the VGA port, you'll need a

DVI-to-VGA adapter, which bundles with some Mac models.

However, this keyboard/mouse/monitor compatibility won't mean much if you buy a Mac laptop (such as an iBook or a PowerBook) or an iMac (which is a Mac desktop computer with a built-in monitor). But if you have a spare monitor, mouse, and keyboard around, you can add them to a Mac mini and have a full-fledged Mac for anywhere from \$499 (for the base model) to \$799 (for the most option-filled mini available). But even if you don't have a spare monitor, keyboard, and mouse, the PC versions of these devices (especially monitors) still cost considerably less than their Apple counterparts.

Once connected, your mouse and monitor will work exactly as they work with your PC, but you'll have to get used to a couple of differences in the keyboard. With a Mac, the keyboard's ALT key works much like the CTRL key works on the PC. (For example, ALT-B formats text in bold for most Mac programs.) In addition, the navigation keys superimposed on the number keypad won't work on the Mac, so you'll have to use the dedicated navigation keys to move the cursor around a page or a spreadsheet.

The Mac can read from and write to any USB flash drive, even if you've already used the drive on your PC first. This makes a flash drive the ideal tool for passing files between the two kinds of computers.

Unfortunately, the Mac has a spottier relationship with other types of PC peripherals. For example, the Mac can read from, but not write to, an external USB hard drive originally formatted for a Windows PC. It will work with most late-model USB scanners and digital cameras, but it may not work with older models, even if they're labeled "Mac-compatible."

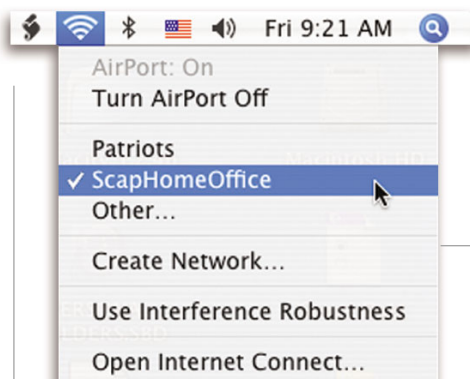


Figure 1. The Mac's built-in AirPort wireless adapter automatically detects your wireless network (if you have one); just click to connect to the network and the Internet.

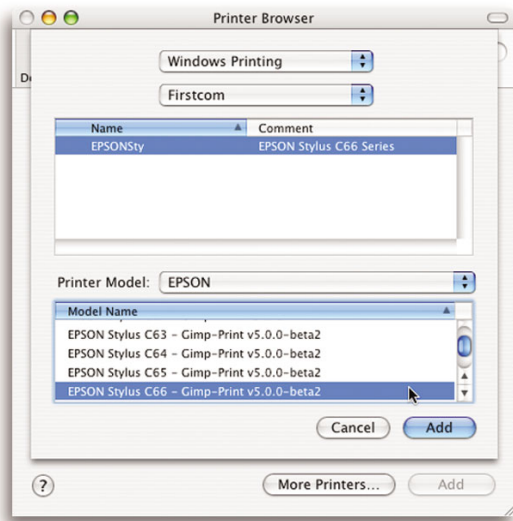


Figure 2. If you have a printer connected to a PC on your network, the Mac also can use the peripheral (and the Mac's beta drivers).

And many other categories of USB peripherals—digital voice recorders, for example—are PC-only. Thus, make sure any new peripheral you'd like to use with your Mac and your PC(s) includes a Mac driver directly out of the box.

Share Your Internet Connection

Once your Mac is up and running, the first thing you'll want to do is get it online. The most economical way to do this is to have it share your PC's (or PCs') existing Internet connection.

If you have a broadband (DSL [Digital Subscriber Line], cable, or satellite) connection and you're already using a broadband router (also called a modem, gateway, or base station) to share that connection among two or more PCs, your new Mac can jump right in. If you're using a wired router (a broadband router without wireless capability), you'll need to run an Ethernet cable from your Mac's Ethernet port to an empty port on the router before starting your Mac for the first (or next) time; the router will automatically send the Mac all the information it needs to share the Internet connection.

If you're using a wireless router, this process is even easier: The first time you turn on your Mac, its built-in AirPort wireless adapter will detect

your wireless network, prompt you to connect to it (and to supply any necessary security information, such as a WEP [Wired Equivalency Privacy] encryption key), and then connect you. If you already missed this step the first time you turned on your Mac, don't despair; just click the Mac's AirPort icon (see Figure 1), make sure

AirPort is turned on, and choose your wireless network from the list.

If you have a broadband connection that you're not sharing, start sharing it. You can pick up a wireless router for about \$50 at any office supply or consumer electronics store; most also have Ethernet ports for connecting computers without wireless adapters. Install the router on one of your Windows PCs (very few commercially available wireless routers come with installation software for Macs), place your Mac anywhere within range, turn it on, and let AirPort detect and connect to your new wireless network.

If you have a dial-up connection and can't get broadband in your area, you have a couple of options. One, you can take your PC offline and make your new, virtually virus- and spyware-free Mac the computer you use for email, Web surfing, IM (instant messaging), and other online activities. Or two, if you can't live without having all of your computers online, you can share your dial-up connection by buying a wireless access point (for about \$30) and installing it on the PC connected to the phone line and then using Microsoft Windows' Internet Connection Sharing feature to share the PC's online connection with your Mac.

Keep in mind that: A shared dial-up connection will likely be slower

than an unshared one; you'll need to purchase a wireless adapter for any other PC with which you want to share the connection; and none of your networked computers can get online unless the PC with the Internet connection is running.

Share A Printer

Another advantage of sharing an Internet connection by using a router is that, in most cases, doing so automatically creates a network among your computers. And once networked, any computer on the network can use any printer connected to any other computer on the network.

Suppose, for example, you want to print from your Mac to a printer connected to a PC on your network. First, share the printer: On the PC, open the Control Panel via the Start menu, click Switch To Classic View (if not already in that view), double-click the Printers And Faxes icon, right-click the icon representing the printer, and choose Sharing. In the dialog box that appears, select the Share This Printer radio button, and then click OK. (Make sure the printer is turned on, of course.)

Next, go to your Mac, open any program from which you want to print, choose File, and then choose Print from the program's menu. In the Printer drop-down menu, select Add Printer, and in the box that appears, click More Printers. In the next box that appears (Mac dialog boxes don't have Title bars), make sure the top drop-down menu is set to Windows Printing and then check the one below to make sure it's set to Network Neighborhood.

In the list below, select the name for your network neighborhood (usually Mshome, the default neighborhood name) and click Choose. Soon you'll see a list of each networked computer that's running and connected to a printer that's turned on. Double-click the name of the computer connected to the printer you want to share and click OK (without entering anything)

in the password dialog box that opens. The printer attached to the computer should appear in the list. Select it; then, under Printer Model, click Generic, choose the printer manufacturer, and then choose the printer model driver (even if it's a beta driver; see Figure 2) in the list that displays below. Finally, click Add to install the printer.

If you'd rather have the printer connected to your Mac, you can do so as long as it's a USB printer. Connect the printer to the Mac and then share it with any PC on the network. Go to the Mac's System Preferences panel, click the Sharing icon, click Services, select the checkbox next to Printer Sharing (see Figure 3), close the panel, restart the Mac, and make sure the printer is turned on. Then, go to a PC, open its Control Panel, double-click the Printers And Faxes icon, and click Add A Printer to start the Add Printer Wizard. Click Next, select A Network Printer, click Next, and then let the wizard guide you through the process of browsing for and installing the shared printer.

Remember: To use a shared printer, the computer connected to the printer must be turned on.

If you don't have a network but would really like to share a printer—especially an expensive printer—and if the Mac and PC will be physically close to each other, you could purchase an A/B switch (about \$30), which will let you connect two computers to the same printer.

Moving Key Files To A Mac

With your new Mac up and running, online, printing, and playing nicely with at least some of your PC peripherals, you might think that you're ready to dive headfirst into Mac computing without ever looking back. But it's more likely that you'll want to bring with you at least some of the files and data on your PC, ideally in a format that Mac programs can use. How successful you'll be at this depends on the type of data—

and, in some cases—on how much new software you'd like to buy.

Photos, movies, audio files, and PDF (Portable Document Format) files: Use them as they are. You can move any photo or graphics file in the formats of JPEG (Joint Photographic Experts Group), GIF (Graphics Interchange Format), TIFF (Tagged Image File Format), or PNG (Portable Network Graphics) to the Mac as they are and use them with virtually any Mac program that works with pictures. (Just copy the photos to a flash drive, plug the flash drive into your Mac, and copy them to the Mac's hard drive.)

You also can move PDF files to the Mac as they are because the Mac has its own built-in PDF reader, called Preview, which does just about everything Adobe Acrobat Reader does. (The Mac also lets you create PDFs from any application, which makes the purchase of Adobe Acrobat for \$299 unnecessary.)

In addition, you can play WAV files (the standard format for storing sound files on PCs), as they are using the Mac's built-in iTunes player. Plus, you can play MPEG (Moving Picture Experts Group) movies using the Mac's QuickTime player, but to play movies in RealNetwork's format, you'll have to download the Mac version of RealPlayer.

For vector clip art and fonts, however, you should consider using a converter. Mac programs won't recognize any WMF (Windows Metafile Format) or EMF (Enhanced Metafile Format) clip art you have downloaded or created yourself, so you will need to convert these files to the PICT format Macs use. Mac-LinkPlus Deluxe

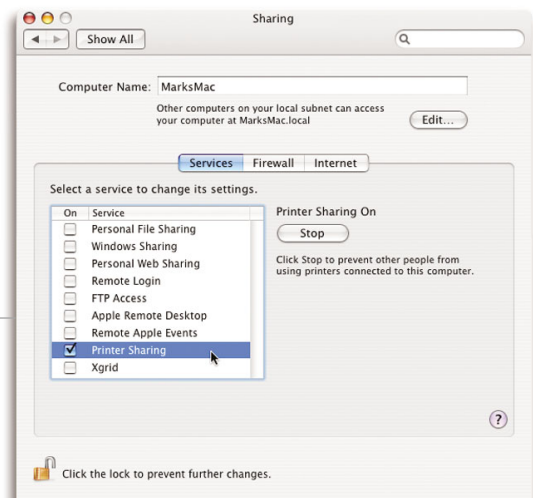
(\$79.99; www.data.viz.com) is the best-selling program for converting these and other types of PC files, but you can probably purchase thousands of PICT images for less than it would cost you to convert them.

Curiously, your Mac will recognize and use Windows TrueType fonts, but it won't package the various attributes under the same font name—which means, for example, that to bold a word in Helvetica, you need to choose Helvetica Bold from the font list instead of clicking the Bold button. You can solve this problem by converting your fonts to true Mac TrueType fonts with CrossFont (\$45; www.acute.systems.com), a very easy-to-use utility you can try free for 15 days.

Email & Contacts

Now it's time to discuss the process of transferring email messages and addresses. The Apple support site and various Mac usergroup sites on the Web are full of techniques for getting your PC email addresses to your Mac, but in our tests, not one of them worked reliably enough to document here. However, if you've been conscientious enough to maintain an Outlook Express Address Book or an Outlook Contacts folder on your PC—and you're willing to do a little work—you can move addresses into the Mac's Address Book program,

Figure 3. If you'd rather connect the printer to the Mac, no problem; the Mac can share it with other PCs on your network.



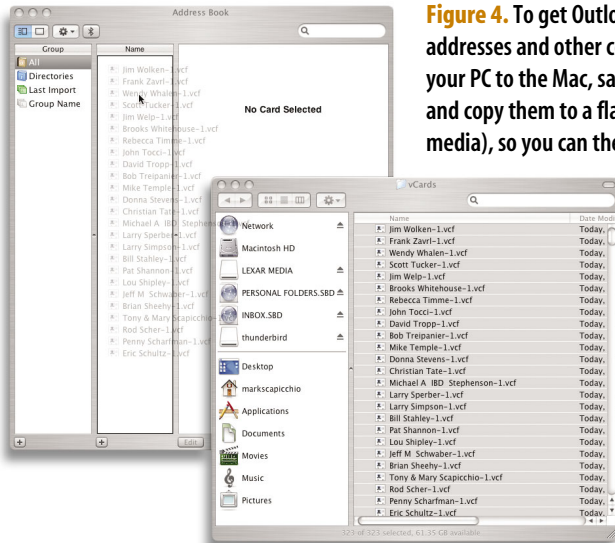


Figure 4. To get Outlook/Outlook Express email addresses and other contact information from your PC to the Mac, save the contacts as vCards and copy them to a flash drive (or other removable media), so you can then connect the portable drive (or media) to the Mac, retrieve the contents, and drag the addresses and contact info to the Mac's Address Book.

which is tightly integrated with the Mac's Mail program.

First, in your My Documents folder, create a new folder called vCards. If you use Outlook Express, click the Addresses button and select the first name you want to transfer; from the menu click File, Export, and Business Card (vCard). Navigate to the vCards folder you created and click Save. Repeat these steps for every address you want to transfer to the Mac.

If you use Outlook, open your Contacts folder and then open the first contact you want to transfer; from the menu click File and Export As A vCard. Navigate to your vCards folder and click Save. Repeat these steps for every contact you want to transfer.

When you've created all of your vCards, copy them to a flash drive or recordable CD and bring the media to the Mac. Open the Mac's Address Book, and in the far-left column, select the group in which you want to place your addresses. Next, access your flash drive or recordable CD, select all the vCards, and drag them to the Names column (see Figure 4) to import your addresses.

If you use Outlook and you've set up a new email account for your Mac, there is a faster way. In Outlook, open your Contacts folder, go to the Edit menu, choose Select All to highlight

all the contacts in the folder, open the Actions menu, and click Forward As vCard. Outlook then generates a blank email form with a vCard attachment for every contact in the folder. Address the email to your Mac account and send the group.

Now go to the Mac, open Mail, open your new message, and click the Save button in the message header. In the lower-left pane, select Documents, click New Folder, type vCards, click Create, and click Save. When the cards have been saved, open Address Book, and use the Finder to open your vCards folder. Then drag the vCards to the appropriate group as described above.

Microsoft Office Files

Microsoft doesn't offer any PC-to-Mac upgrade pricing for Microsoft Office, so if you want to work with Office files on your Mac, you have a decision you need to make.

You could spend \$399.95 on Microsoft Office 2004 for Mac (www.apple.com/macosx/applications/office), which works very much like the Office you know and love, is a step ahead of PC's version of Office in the way it handles graphics, and can exchange files rather seamlessly with PC's versions of Office applications.

(Unfortunately, it also compromises the Mac's built-in security to a degree because even though there is only one Mac OS X virus, there are a few hundred macro-based viruses that target Office for Mac applications.)

Or, if you don't use spreadsheets that often and aren't married to Microsoft Office's methods or advanced features, you could purchase Apple iWork (www.apple.com/iwork), which costs \$79 or is available as a free 30-day trial with new Macs. The iWork software includes Pages, a word processor/desktop publisher that imports and exports Microsoft Word files, as well as Keynote, a presentation graphics program that imports and exports PowerPoint files.

Pages and Keynote can't do everything their Office counterparts can do (Pages, for instance, lacks mail merge and AutoCorrect features), but they are pretty simple to learn and include templates that will let you easily create documents and presentations you can't duplicate in Office.

Rumor has it that iWork will soon add a spreadsheet application called Numbers, which will read and write Excel files, but until then, you may be able to get by with the spreadsheet in AppleWorks (check your Applications folder), which imports and exports Excel data and formulas but seems to ignore Excel formatting.

No Need To Fight . . . Or Switch

The bottom line is that in about an hour or two (and often less than that), and for little or no additional cost, your Mac can be taking advantage of many or most of the PC peripherals, services, and files that you've already bought, set up, or created. So, if you think you'd like to buy yourself or someone you love a Mac, you can do it without fear of giving up anything or suffering any dire consequences. ■

BY MARK SCAPICCHIO

The Thrifty PC

We Built The World's Cheapest PC—Almost



There's a particular type of hunter who prefers grounds such as dollar stores and rummage sales to track down trophy game. The hunting season for these hunters lasts year-round, but you'll typically notice an influx of hunting activity during the holiday season. With the uncanny ability to ferret out the perfect target from a herd of potential alternatives, bargain hunters stalk the aisles of retail stores looking for the next opportunity to pounce on a deal.

When it comes to computer shopping, the best deal used to be building a computer yourself. But companies such as Dell, Gateway, and HP have introduced entry-level PCs that stretched our dollars further and forced most of us off of the DIY road. Assembling a computer also used to be a surefire way to save a few hundred dollars, but now it's more of a hobby among those who like to roll up their sleeves, go it alone, and learn a little more about a computer's innards in the process.

Because you can purchase a PC that's suitable for reading and sending email, surfing the Internet, and using other basic applications for about \$300 (with a monitor included), the homebrew PC may actually be the more expensive option nowadays. Nevertheless, we decided to raid the couch cushions, dig up the change jar from the backyard, and break our piggy bank to see if building the world's cheapest PC would be an exercise in frugality . . . or futility.

Tricks Of The Trade

If you're hoping to emulate our penny-pinching PC shopping adventure, you'll need to understand that we began our bargain safari with a few tactics we hoped would land us some savings. We stopped short of robbing a local CompUSA, but we took every legal opportunity to shave excess dollars off of our bottom line.

OEM—Our three favorite letters. An OEM (original equipment manufacturer) will purchase hardware and software for a computer, assemble the computer, and sell it under its own brand name. Because of this, OEMs have little need for the boxes and extraneous packaging associated with selling the identical hardware and software on

retail shelves. Typically, OEM hardware "packaging" consists of little more than extra-durable bubble wrap.

You obviously won't find OEM hardware in retail stores, but many online merchants give you the opportunity to purchase OEM hardware for less than retail versions of the same hardware. When you order this hardware, it should include the hardware itself and the necessary drivers on a CD-ROM (or CD-ROMs).

So, don't be surprised when your OEM video card arrives without a box to help you identify it from other cards; that's the nature of OEM equipment.

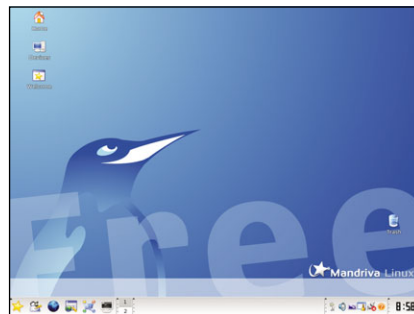
Fall in love with rebates. The use of rebates is so commonplace among retailers that offering them to entice potential customers is practically second-nature. Instant rebates are ideal because you immediately reap the rewards of smart shopping without lifting a finger. Mail-in rebates require attention to detail when filling out the forms and patience when waiting for the coveted rebate check to arrive in your mailbox.

Mail-in rebates from online retailers generally require you to jump through the same hoops as mail-in rebates from brick-and-mortar stores such as CompUSA or Best Buy. But like building your PC, you'll probably need to take a DIY approach to an online store's mail-in rebates.

For example, when we needed a mail-in rebate from Newegg.com, we found that it was a downloadable PDF (Portable Document Format), requiring Adobe Acrobat Reader (a free download is available from www.adobe.com) to view it and a printer to—well, yeah—print it. Thus, when ordering computer parts online, make sure you have everything you need to complete each respective rebate.

(NOTE: Be aware of the fact that some manufacturers take a long, long time to honor rebates. Also, we often receive letters from consumers who never do receive the rebates they were promised.)

The fast food approach. There's a reason why we order combo meals at our favorite burger joints: It costs less



Until we sidestepped our motherboard's integrated graphics, Mandriva Linux's desktop was an unattainable fantasy.

than ordering each item separately. Computer hardware retailers take the same approach when peddling their wares. Keyboards and mice make a logical pair, but with minimal effort, you also can find motherboard/CPU combos and motherboard/case combos (often called bare-bones packages).

In some instances, you can combine components. For example, motherboards with integrated graphics circumvent the need for a separate graphics card. But be willing to accept trade-offs. Going back to our example, integrated graphics may produce dismal results if you play a lot of 3D games, but for basic tasks, integrated graphics are your knight in discount armor.

Don't forget the shipping. Paying a slight premium on a number of components from one retailer and getting lower shipping charges as a result may be a more cost-effective approach than buying a single component from a single retailer.

Let's Make A Deal

Armed with our bag of tricks and miserly instincts, we set out to rustle up



It certainly won't win any beauty contests, but our budget PC eventually did what we needed it to do.

some discounted and cheap hardware. We started with the backbone of any computer—the motherboard—and found a deal so good that we had to glance over our shoulders to ensure ourselves that local law enforcement officials wouldn't haul us away on larceny charges. We found a motherboard/processor combo on TigerDirect (www.tigerdirect.com) that only set us back \$59.99 after a zesty \$80 mail-in rebate, thereby essentially netting us a free motherboard with integrated graphics.

We decided that buying a little extra memory would be one of our more

cost-effective splurges. Thus, we were hoping for a \$10 mail-in rebate on 512MB PNY RAM, but Newegg.com (www.newegg.com) was out of stock. (If time isn't an issue, retailers may reward your patience by sweetening the deal with a rebate or a discount.)

Taking the cheap route and buying a case with an attached power supply is always a gamble because built-in power supplies are notorious for their unreliability. If you pursue a similar PC-building strategy and your end result is an unstable system (for example, it may boot properly but crash after only a short while or a heavy workload), the power supply might be a dud. Properly installed hardware can still behave improperly if it doesn't receive enough juice from the power supply.

We concluded our frugal hardware fiesta with a 52X CD-ROM drive, 17-inch refurbished CRT (cathode-ray tube) monitor, 40GB Maxtor hard drive, and a hardware modem. It's important to know the difference between winmodems and hardware modems because Linux is a picky OS (operating system) in this area. Winmodems are cheaper because they rely on certain

Super Software, Super Cheap

Anyone who's purchased the full versions of software such as Windows XP or Adobe Photoshop CS2 knows that outfitting a PC with the proper software can be just as expensive as buying the hardware necessary to run it. We realize most PCs are equipped with WinXP and a handful of applications, but there are mountains of free software waiting for you to download that will help you accomplish most of your computing chores at a fraction of the cost.

For starters, you have to overcome your ornithophobia and embrace Linux and its penguin mascot. Linux is the open-source alternative to WinXP. Instead of relying on Microsoft's programmers to develop patches, updates, and new features, a worldwide community of software developers can freely pool their resources to improve Linux.

There are different distributions, or distros, of Linux—often with exclusive features to make one Linux distro different from another. It sounds confusing, but if you compare SuSE's Linux to Mandriva's version and Red Hat's version, you should be able to understand the difference.

Mozilla's Firefox 1.5 (free; www.mozilla.com/firefox) is one of our favorite alternative Web browsers, regardless of

which OS we're using. Not only was Firefox blocking pop-up ads before Internet Explorer, but it also provides you with tabbed browsing. With IE, viewing multiple Web sites means opening extra windows and clogging your Taskbar. Instead, Firefox can help you open Web sites and view them within tabs; all of these tabs remain in a single window. Firefox also has an integrated search feature that lets you search sites such as Google, Yahoo!, and eBay.

If you like Firefox, we suggest using Mozilla's Thunderbird (free; www.mozilla.com/thunderbird), an email client that will tame your inbox. Thunderbird automatically detects and deletes junk mail. Plus, it supports HTML (Hypertext Markup Language) and can search your inbox for that elusive email from Uncle Ned.

For Microsoft Office aficionados, try OpenOffice.org (free; www.openoffice.org). This open-source office suite also is available with many Linux distros, but you also can download it. The suite includes word processing, spreadsheet, and presentation applications that might make you wonder why you ever paid to use Word, Excel, and PowerPoint. ■

resources within Windows to properly function. For more details, see our online-only addendum, "Avoid Modern Maladies In Linux," at www.smartcomputing.com/scmar06/modem.

After we ordered our hardware, we weren't willing to sacrifice a lot of cash on an OS that would turn our pile of metal, silicon, and circuitry into a fully operational system. Thanks to the **open-source** (software whose source code, the basic programming instructions, is available to everyone) movement, we didn't need to. We selected Mandriva Linux (www.mandriva.com), which is available as a free download. Because the necessary files are approximately 2.5GB, we used a separate PC with a broadband connection to download three ISO files (which store the contents of CD-ROMs) and burn them to blank CD-Rs (CD-recordables).

Although we had the luxury of relying on a separate PC to download the Linux files, you'll have to buy a hard copy of Linux if you don't have another system handy. The installation files are so large that using a dial-up connection isn't a feasible method to use. Prices can vary, but you'll quickly discover that just about any version of Linux is more affordable than WinXP.

For more information on other nifty software for the thrifty, see our "Super Software, Super Cheap" sidebar.

With shipping, tax, and discounts/rebates, our grand total for the hardware is \$330.71. "The Parts List" chart itemizes each hardware component's cost.

It Lives! Er... Well, Sort Of

There were a couple of unpleasant surprises when we opened the cardboard boxes and unearthed our hardware from its Styrofoam peanut resting place. Our motherboard/CPU combo didn't include a heatsink and fan that's required to keep the CPU from overheating during operation. We used a spare heatsink and fan, but an inexpensive combo would have added about \$10 to our bill.

The Inland case we bought turned out to be a bust. The case's front was broken, so we had to tape it to the case's flimsy chassis. Other than the shoddy case and MIA heatsink and fan, everything else arrived as we expected. We didn't encounter any extraordinary difficulties during the budget build, but certain components, such as the motherboard and hard drive, didn't slip into place as effortlessly as they would have with a more expensive case.

Although we were expecting to experience Mandriva Linux and all of its penguin goodness without too much trouble, we quickly realized that Linux didn't like the integrated graphics on our cheap motherboard. We tried several different graphics configurations, but none worked. Linux unleashed its avian rage, and we eventually admitted defeat and used a spare Gainward PowerPack! Ultra/1100XT NVIDIA GeForce FX5900 XT graphics card.

When we reinstalled Linux with the Gainward graphics card, it became a far friendlier system. We didn't have to change any settings from their defaults, and Linux loaded fine. A graphics card

would have added \$30 to our total, but we might have saved a little money by foregoing integrated graphics on our motherboard in the first place.

Bring An Extra Paddle

It took some time warming up the Linux counterparts to common Microsoft applications, but we found we were able to perform the same tasks on our system via Linux. Our budget system handled everything an entry-level system from a major manufacturer could. Ultimately, you'll save more cash if you order parts and build a system, but when we factored the cost of our own sanity into the equation, paying extra for a professionally-built PC (and one that includes a warranty and a tech support phone number) didn't seem like such a bad idea.

It's not inherently wrong to find the lowest possible prices as we did, but you should heed our build-at-your-own-risk disclaimer if you decide to embark on a similar odyssey. ■

BY VINCE COGLEY

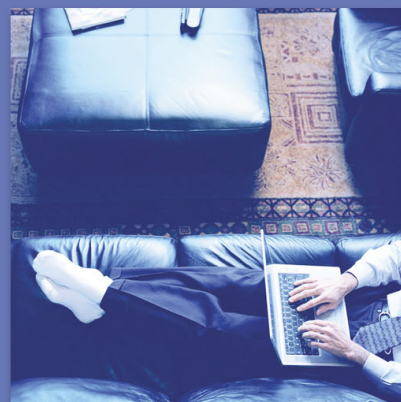
The Parts List

Online deals change every day, so assembling the world's cheapest PC might involve a completely different set of parts at any given moment. We used the following pieces in our penurious PC. ■

Part	Price	Shipping Fee
Motherboard/CPU/Graphics	\$59.99 (after \$80 mail-in rebate)	\$18.54
Hard Drive	\$42.99	included with motherboard and CPU
RAM	\$44.71	\$9.02
Case	\$29.99	included with motherboard and CPU
Keyboard/Mouse	\$7.50	included with RAM
Monitor	\$49	\$25
Optical Drive	\$14.99	included with motherboard and CPU
Modem	\$19.99	\$8.99
Parts Subtotal	\$269.16	
Shipping Subtotal		\$61.55
Hardware Total	\$330.71	



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Mr. Modem Waxes . . . Um, Poetic

Spring has nurtured the poetic spirit since time immemorial. For those who know me not as Mr. Modem, but as a Pulitzer-lacking poet, each year at this time, I am reborn, renewed, and rejuvenated with thoughts of spring: The gentle, cleansing rains; the delicate aroma of lilacs wafting through the clear, crisp morning air; the images of frolicking robins, violently pulling worms from the earth to their certain deaths. Each spring also rekindles my enthusiasm—dare I say passion—for computing, and the unbridled joy I feel watching Mother Nature through the dual-pane, insulated, air-conditioned, air-purified, allergen-free environment of my office. I can see the first few tips of the computing season beginning to emerge, and all indications suggest a bumper crop. Let's take a closer look:

If you're using Windows XP or 2000, press the SHIFT key five (5) times, followed by the Settings button to display several useful accessibility options. My favorite is the one that beeps every time you accidentally hit the CAPS LOCK key. I HATE IT WHEN THAT HAPPENS! You'll find it on the General tab of the Accessibility Options dialog box.

Burning CDs can be a burning pain if you're not comfy with your CD-burning software. If you use WinXP, you don't need any confusing, third-party software to write files and folders to CDs or DVDs because you have your own confusing software integrated within XP. I'm just yanking your cable; it's not confusing at all: Simply right-click a file or folder that you want to copy to CD and select Send To and then CD/DVD Drive. Insert your CD, open My Computer and double-click your CD drive. Next, click File, followed by Write These Files To CD. Then sit back, relax, and let it burn, baby, burn.

Have you ever tried to take a fast, file-manager style look at your Desktop, only to conclude that you should have packed a lunch because of the time-consuming, click-laden nature of the task? The next time you're in a file-manager-Desktop-viewing mood, click Start, Run, type **Desktop**, press ENTER, and you're there! This is particularly useful for sorting by file type when removing downloads or other virtual accumulations from the Desktop. The same process works with WinXP and 2000 for My Documents, My Music, and other system folders, but not all versions of Windows 9x. If it sounds intriguing, give it a try. If it works,



tell all your friends that you learned this fabulous trick from Mr. Modem's column in *Smart Computing* magazine. If it doesn't work, well, some things are best kept to yourself.

If you receive a Word DOC file, but you don't have Word installed on your computer, there is no longer any reason to feel inadequate, inferior, or humiliated. With your mental health in mind, Microsoft thoughtfully provides the free Word Viewer (<http://tinyurl.com/64atx>) utility you can use to view, print, and copy Word documents. And remember that the free OpenOffice suite (www.openoffice.org), also accommodates Word DOC files.

Spring is a time for pruning, so remove dead, duplicate, or sucker sites from your bookmarks or favorites folder with the free Deadlink application (<http://tinyurl.com/6ejmq>). It works with Internet Explorer, Firefox, Netscape, Opera, but not AOL. Pity.

Paging all Internet Explorer Users: Have you ever clicked Tools, Internet Options, and Security, and wondered what those mysterious security zones are all about? OK, me neither, but would it be asking too much to say, "Golly, Mr. Modem, that's the one piece of information that will give new meaning to my life"? That's better. To review an excruciatingly detailed treatise about IE's Security Zones and their various settings, visit <http://tinyurl.com/cd9da>. You'll thank me some day. Maybe not soon, but some day.

And finally, last December I introduced the 7Up Mind Reader (<http://digicc.com/fido>), guaranteed to amaze and astound even the most cynical among us. It was so popular that I'm back with another humdinger (sorry, sometimes technical talk is unavoidable) to share with you. Check out the Flash Mind Reader at <http://tinyurl.com/dhlyw>. "It will blow your mind," as we '60s relics like to say.

I'll meet you back here next month. In the meantime, wishing you a vivacious Vernal Equinox. ■

BY MR. MODEM

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit www.MrModem.com.

Web-Based Calendars

Schedule Your Life From Anywhere

The Internet, that ethereal and seemingly unending stream of information, has worked itself into the fabric of our lives and allows us to accomplish many day-to-day tasks online.

Managing schedules with a Web-based calendar is a perfect example.

If you already use a PC calendar, such as the one that is a part of Microsoft Outlook, you know the convenience of electronically noting appointments and setting reminders. If your system is hooked up to a LAN (local-area network), you can share your Outlook calendar with others, send meeting invitations to co-workers, and remotely log in to your PC.

But for those of us without such office connections, or whose lives go beyond the office, having a Web-based calendar is a satisfying alternative. Even if you're still hugging that leather-bound planner, these online calendars are worth a look.

Common Features

Because Web-based calendars reside on a remote server, you can access them from anywhere with just about any Web-accessible PC or device. Other handy attributes include the following:

Low cost. Web-based calendar services are often inexpensive—or free.

No syncing. Just import appointments and contacts from your current electronic calendar in the CSV (comma separated value) file format. (If you prefer to synchronize, most online calendars *do* support Microsoft Outlook.)

Shareable. Let others view or update your calendar.

Email-savvy. Send email invites and reminders directly from the calendar.

Feature-rich. Features range from address books and task lists to blogging and text-messaging support.

Three Web-based calendar programs want to be the place you come to for managing your schedule and communicating online. We look at Trumba OneCalendar, Airen's Airset, and Yahoo! Calendar.

Trumba OneCalendar

www.trumba.com

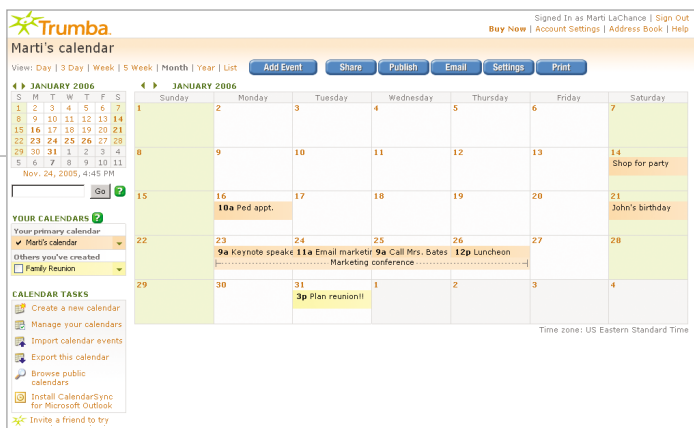
Trumba has a 60-day free trial, after which there is a \$39.95 annual fee. (It's the only product we reviewed with a price tag.) The interface is clean and clear. All the frequently used commands reside in the simple horizontal menu. (Companies providing free Web calendars make money in obvious and not-so-obvious ways. They may display banner ads, as Yahoo! does. Or they may try to entice users into adopting services provided by commercial partners, as Airset does with the Skype service.)

Adding events. Let's start with a basic event: a birthday. Click the Add Event button, enter event specifics, and select the checkbox labeled All Day Event. Mark the birthday as an annual event with no end date. To populate your calendar with more meetings and appointments, again, simply click Add Event. You can also set Trumba to send an email or cell phone reminder.

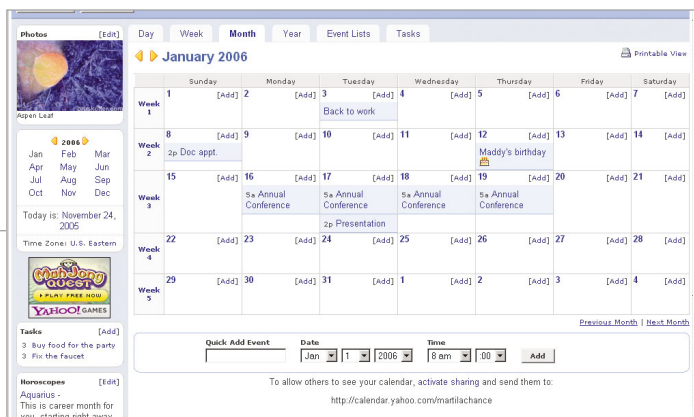
If you manage multiple Trumba calendars, their names appear to the right of the monthly view. For any event you create, select a checkbox



The Trumba OneCalendar has a clean, manageable interface.



The Yahoo! Calendar lets users to include photos in the upper-left corner of the interface.



next to a shared calendar to include the event there, too.

Sharing. You can designate a specific set of individuals to view or even update your Trumba calendar. Simply click the Share button and add an email address. These individuals must be Trumba subscribers. If you choose to publish a calendar, it becomes available for anyone to view—but not edit—on the Web.

Managing contacts. Surprisingly, the address book in Trumba is very sparse—it's a collection of email addresses only. You can manually create entries or update the address book from a text file. Click the Email button to send invitations or create a distribution list. Recipients (even non-Trumba subscribers) can add Trumba events to their Outlook calendars.

Special features. Trumba makes it especially easy to create and manage multiple calendars. Select Create New

Calendar. This feature is terrific for managing alternate schedules and for planning events such as weddings and family reunions. As long as everyone is a Trumba subscriber, you can ensure that all involved parties know what's happening.

Strengths: Clean interface, easy to manage multiple calendars.

Weaknesses: Bare-bones address book.

Airset Calendar www.airset.com

The Airset interface is a busy one. The three tabs in the upper left—Public, All Groups, and Personal—let you view different types of calendars. The Public tab is for browsing public events published by all Airset users. The Groups tab is for viewing events on the calendars you manage or subscribe to. The Personal tab is your very own calendar, which defaults to the monthly view.

Adding events. To add a new event, select New Event from the Calendar menu. (For such a common action, we'd prefer a one-click command.) For an event such as a birthday, check the box designating an all-day event. To make an event repeating, click the Series subtab, where there are excellent tools for configuring repeating events. Invite others to the event, and if you wish, set up email reminders to yourself and others.

To add more appointments, again select New Event under the Calendar menu. It is simple to add attendees, send email notifications, and request RSVPs.

Sharing. Options for sharing (again, located under the Calendar menu) are either to share a calendar with everyone in an Airset group you've created or to make a calendar entirely public on the Web.

To create a separate group calendar, go to the Group menu and select Create a New Group. Once you've set up a group calendar, you can specify an event be viewable via any group calendar.

Managing contacts. Somewhat confusingly, Airset's Address Book is also called the Contact List. By clicking a name in Contact List, you can create a full-fledged dataset for an individual, including multiple email addresses and street addresses.

Special features. Airset has plenty of cutting-edge features, such as sending text messages, making Skype phone calls, or creating a calendar-related blog. Also handy is the ability to search your Airset calendar.

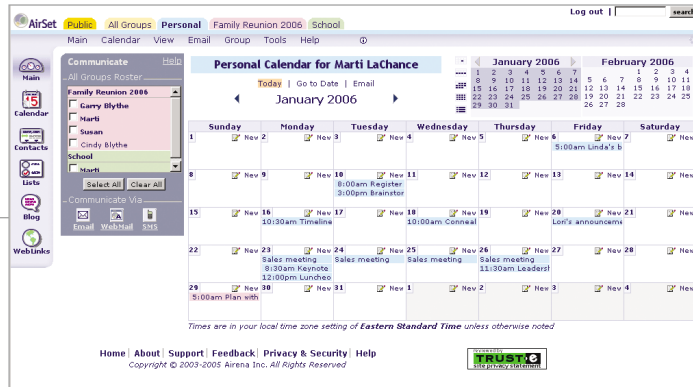
Strengths: Many attractive features for communicating online.

Weaknesses: Cluttered interface.

Yahoo! Calendar calendar.yahoo.com

If you are already a Yahoo! member, it's easy to sign up for the Yahoo! Calendar service. Otherwise, you'll have to register with one

The Airset calendar includes such features as the ability to create a calendar-based blog.



of the Internet's largest subscription services.

The cheesy blinking ads in the calendar's initial view were disappointing. However, after we changed the view from day to month, the ads became less intrusive.

Commercials aside, Yahoo!'s calendar offers a host of useful and elegant touches. The calendar contains American holidays and numbered weeks. And you can select small "calendar art" photos to display. Calendar options are numerous. Display national sporting events, financial events, and events from other Yahoo! calendars. If you don't mind a crammed-looking calendar, you can even view weather and horoscopes.

The Yahoo! Calendar interface is very intuitive. There are four main sections listed as buttons across the upper left: Mail, Addresses, Calendar, and Notepad. Controls for each are all located in drop-down menus.

Adding events. To add a birthday, select Add Birthday from the Calendar drop-down menu. Yahoo! automatically records it as an annual, all-day event. If you add a birthday as a regular event, you can send invitations to the event by email.

Add appointments by selecting Add Event from the Calendar drop-down menu. Send invitations and request RSVPs. Yahoo! has very good controls for designating recurring events.

Sharing. Click the Sharing command to make a calendar public. If

you wish to restrict viewing to a select group of individuals, each person must be a Yahoo! member.

Contact management. Yahoo!'s address book provides many useful and searchable fields. It is good enough to maintain as your primary source.

Other features. We like the Tasks feature (under Calendar), which displays tasks in a to-do list next to your monthly calendar. Also cool is the way you can label events by type (meeting, vacation, birthday, etc.). This allows you to sort and view all birthdays, for example, in a list.

Strengths: Clean interface, excellent address book, and the ability to view national holidays.

Weaknesses: Advertisements.

Calendar Consensus?

Trumba OneCalendar's elegant interface is excellent for professionals hankering to integrate their office schedule with others they juggle. Airset will appeal to individuals who enjoy tinkering and want all the latest features. And the Yahoo! Calendar may work best for those simply wanting a free personal calendar online, especially if they're already Yahoo! subscribers.

Try one out for size. One day, you'll wonder how you held it all together without the Internet. ■

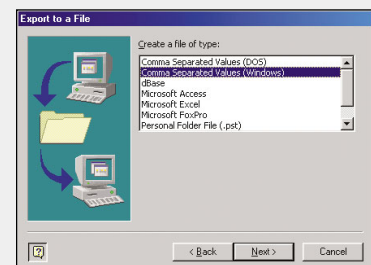
BY MARTI LACHANCE

Microsoft Outlook's Import And Export Wizard

Web-based calendars allow for importing contacts and calendars from Microsoft Outlook. But first you must export this info from Outlook as CSV (comma separated value) files.

- In Outlook, go to the File menu and select Import And Export.
- Select Export To A File and click Next.
- Select the Comma Separated Values (Windows) file type and click Next. (If prompted to install the Import/Export engine, select Yes.)
- Select the Contacts file from the directory tree and click Next.
- Name the file and browse to the folder in which you wish to save it. (Retain the .CSV extension.) Click Next.
- Click Finish.

Repeat the above process to export your Outlook calendar. Next, use your online calendar's import functions to populate your online address book and calendar. ■



Microsoft Outlook's Import And Export Wizard



Just Over The Horizon

Visit Nationalgeographic.com For Hours Of Site-Seeing & Learning

Remember when you were a young child, so full of curiosity that you thought you might burst if all of those pressing questions didn't stop entering your head, and so full of impatience when your mother or father (or both) couldn't immediately give you a definite answer to your question of the hour. Well, now parents and grandparents everywhere have a source they can turn to—day or night—when children start spout-ink out question upon question: Nationalgeographic.com (www.nationalgeographic.com).

Of course, you have to be careful if you plan to journey online in front of the youngsters because just visiting the site's home page is bound to spark even more questions among such curious minds. Thankfully, Nationalgeographic.com is available to provide the answers.

Planet Earth & Beyond

When you first visit Nationalgeographic.com, you'll immediately wish you had more time to casually browse the numerous categories it presents on the home page. And

knowing what you know about *National Geographic* magazine, there's no doubt in your mind that there's much, much more below the surface.

The Site Index on the left side of the page provides a sampling of the site's wealth with such categories as Adventure And Exploration, Animals And Nature, History And Culture, Maps And Geography, Photography, and Travel. But if that little question-spouter just happens to be peering over your shoulder, you might want to start with the Kids category.

So, just for fun, let's pretend we're an 8-year-old, and click Kids to see what we can see. From the moment its colorful front page appears on-screen, you know kids will love it.

Directly on top of the page, visitors will see exciting topics to explore and colorful pictures to view. When we visited, we saw featured items about West Indian Manatees, Polar Bears, Tsunamis, Emperor Penguins, and Godzilla. Along the left side, there's links to Kids News, Games, Activities And Experiments, Creature Features, Cartoon Factory, Homework Help, Maps, and more. In the middle of the

page, there are projects such as making animal art rocks, creating your own scented bath salts, finding out what your birth year animal is, and reading an article about a film featuring an invasion of cicadas.

At the bottom of the page are some tools that young visitors will find helpful as they start working more with maps—either for school or just for fun. For example, let's assume your son is working on a geography report and needs to locate some very detailed maps. All he has to do is click the MapMachine link, and he'll have access to a tool that can help him plan a bike trip using trail maps or find an area according to population or climate. If he needs to mix in a bit of history, he could add some facts about a country, as well as compare a modern map to one of the antique maps found here.

Feature This

Now that we showed you where you can find answers to at least some of those urgent questions, let's move back to the home page, where the Today's Features heading probably

caught your eye. At the time of this writing, Nationalgeographic.com included several links in this area: Buddha Rising, New Mammal Named After Chocolate Giant, Fairy Tale Physics, and 2006 Postponed By One (Leap) Second. Plus, we also noticed an Our Top Ten News Stories Of The Year link below a photo of a giant squid, so naturally, we just *had* to find out what that was all about and click the link.

(NOTE: If the latter link is no longer available, you'll find the content at news.nationalgeographic.com/news/2005/12/1219_051219_topten_news.html.)

Once we skimmed the Our Top Ten News Stories Of The Year links on the next page, we found even more golden nuggets that prompted us to dig deeper. About 20 minutes later, our mind was swimming with knowledge about researchers' first successful record (via specially equipped cameras) of a live 25-foot-long squid in its own habitat (2,950 feet underwater near Japan's Ogasawara Islands); the capture of a monstrous catfish (measuring 9 feet long and weighing 646 pounds) in Thailand; the discovery that there really are ligers (offspring of male lions and female tigers) in existence; as well as many other fascinating findings and unforgettable news events from 2005.

Just as we're starting to question our career choice and wondering why we never became a marine biologist or

veterinarian, another one of our son's urgent questions presents itself: Wouldn't it be cool to have a lizard as a pet? Although we're hesitant about welcoming a reptile as a pet (no matter how cute he thinks they are) in a home with two cats and a dog, we decide to investigate the matter further before he asks about it again.

We consider clicking the Animals And Nature link from the home page's Site Index, but decide to give the Search tool in the upper-right corner of the current page a try instead. We type **lizard pet** in the Search field and click Go. The list of search results offers several captivating choices: Snake Ancestors Lost Limbs On Land, Life Is Confusing For Two-Headed Snakes, and Aussie Cats To Be Kept Indoors (which also discusses endangered lizards). We click the Computer Model May Identify Conservation Hot Spots link and find out that several species of chameleons are threatened with extinction because of loss of habitat and illegal exports for the pet trade.

The article goes on to explain that an associate curator of vertebrate zoology at the American Museum of Natural History and his colleagues conducted research in Madagascar, an island just off the eastern coast of Africa, to see



Nationalgeographic.com Kids appears to be a scaled-down version of the main Nationalgeographic.com site, but don't let its simplicity fool you; Its pages are still packed with information.

how the rapid loss of its forests (only 10% of the island's original forests remain) is affecting various species of chameleons. What the researchers found was that by developing a computer model based on satellite data, field evidence, and museum specimens, they could generate layers of maps to predict where the different species of chameleons were living and present this information to governments and organizations in the area to persuade them to help preserve wildlife, which is especially crucial for reptiles living on Madagascar because at least 90% of them exist only on that island.

Well, that bit of data extraction costs us another 10 minutes, without really finding the answer to our son's question, but maybe we can use that "illegal exports for the pet trade" info to our advantage.

Speaking of endangered species and habitats, we often wondered how many of these fragile regions exist throughout the world today. We click the Site Index link in the upper-right corner of the page to find a related link on the topic, but we don't see one that quite fits our specific question. However, we do see a Nature And Conservation link, which leads us to a page with dozens of categories, including one that matches our topic: Wild World Conservation Atlas. We click the link and are surprised to learn that there are 867 land-based ecoregions in the world (at the time of this writing).

Tips For Using Nationalgeographic.com

• Photos That Speak Volumes

If you're familiar with *National Geographic*, you know how breathtaking and thought-provoking its photos can be. Click any of the links near the Photo Favorites heading (such as In Traveler: Photo Contest Winners) in the upper-right corner of the home page to see some of the best photos the site has to offer.

• What's In Your Backyard?

Ever wonder what animals and plants are native to your area of the country? The list that Nationalgeographic.com provides might surprise you. Visit www.nationalgeographic.com/animals, find the U.S. Local Wildlife Guides box in the middle of the page, type your ZIP code in the appropriate field, and click Go to scour the database of more than 6,000 animal and plant profiles.

Go Back In Time

By now our stomach is rumbling, so we can't help but notice what time it is, and that's when we realize that—despite our best efforts to stay on task—we *have* been casually browsing the site for more than an hour, even though we really didn't have the time to do so. We rush off to a meeting we should've already arrived at, and once seated, our mind starts to wander (and wonder) about other questions we—well, uh, our son has: Why don't we know exactly how the pyramids were built? How many people would it take to build them? Does anyone have a guesstimate about how long it took to build even one of them? We make a mental note to check on those questions after the meeting.

When we finally get a chance to head back to Nationalgeographic.com, we click Educators Home Page below the Teachers And Students heading in the lower-left area of the home page, scroll down until we see the For Students link in the lower-left corner, and we immediately see the link we're looking for: Egypt—Secrets Of An Ancient World. Gleefully, we tell ourselves that we're lucky we found the link right away so we can find our answers and get back to work.

Once we click the link, however, we discover that there are dozens of additional links for us to choose from below the News Stories heading. Our first choice, Pyramid Builders' Village Found In Egypt, reveals that researchers excavated a village just south of the Sphinx, near an area believed to be the pyramid workers' cemetery for those building Pharaoh Khufu's Great Pyramid. The researchers think the village is 4,500 years old and was home to as many as 20,000 people, although further analysis revealed barracks that may have housed 2,000 temporary workers at one time, leading them to assume that the pyramids were a collaboration of both permanent skilled labor and temporary labor.

At the end of this article, we see a follow-up link to a related article,

Ancient Pyramid Chambers Opened, where we find out that archaeologists also discovered a sealed sarcophagus that's more than 4,000 years old with a mummified man inside that hieroglyphics identify as Ny Swt Wsrt, the overseer of the builder's village.

Not really being able to specifically address the set of questions our son asked in the first place, we head back to the front page for Egypt and notice that the graphic on top of the page leads to a timeline for all the pyramids and several useful links, including one for the Who Built The Pyramids? article. From this source, we find the details our son wanted to know. The article states that historians estimate that Egypt needed 20,000 to 30,000 workers to build the Pyramids At Giza over a period of about 80 years. They also believe that the Nile River was flooded during this time, making it easier for the workers to float huge limestone blocks from quarries. But even then, the feat of building the pyramids still relied on extensive manual labor, brilliant architects who ran ropes from the outer corners to make sure the stones were placed in the proper positions, as well as priests/astronomers to choose the ideal locations.

Join Nationalgeographic.com Addicts Anonymous

As we complete our travels through Ancient Egypt, we glance at the clock and . . . what?! That can't be the right time, can it? Another 50 minutes has flown by already. (*Sigh.*) Oh well. It's already time to head home. No, not back to the home page—we *really* need to get home to help our son with his science project on volcanoes, which reminds us of another article summary we happened to notice as we were browsing: Fire And Iceland—Volcano Research (see the Science And Space Index at www.nationalgeographic.com/siteindex/science.html). Hmmm . . . maybe we could spare just five more minutes . . . after all, it *is* educational. ■

BY KIMBERLY S. FITZKE

Nationalgeographic.com

FACT SHEET

Back in 1888, 33 men—including geographers, explorers, teachers, lawyers, cartographer, military officers, and financiers—met in Washington, D.C., to discuss the creation of a society “for the increase and diffusion of geographical knowledge,” which they officially named the National Geographic Society. Due to their collective desire for knowledge and continued efforts to share that knowledge, the Society eventually evolved into the largest nonprofit scientific and educational institution in the world.

Nine months after founding the Society, the group published the first *National Geographic* magazine. Today, the National Geographic Society continues its quest for making new discoveries and sharing their findings with others, but it's also dedicating itself to more timely causes, such as preserving the planet's natural resources and proving educational content. In doing so, it has branched out to include four other magazines, as well as the National Geographic Channel, TV documentaries, films, radio programs, books, maps, and more. As a result, it now reaches an estimated 285 million people throughout the world each month, and one out of every four *National Geographic* readers reads the magazine in a language other than English.

Other areas in which the National Geographic Society has thrived is in funding research projects (with over 8,000 projects in 181 countries), forming the Expeditions Council to encourage exploration (especially in areas yet to be thoroughly scouted), and creating the National Geographic Conservation Trust (to issue grants for conservation activities). ■

On such a nice day,
don't you want to go outside and play?



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A Heartfelt Gift

Make Sure Your Charitable Donation Goes To A Legitimate Place

Americans are generous people. According to the Chronicle of Philanthropy (www.philanthropy.com), in the first couple of weeks following the Sept. 11 attacks, charities reported receiving nearly \$550 million. To date, that total is more than \$2.8 billion, including international donations. That amount jumped to nearly \$800 million in the initial weeks after Hurricane Katrina, and as of December 2005, that total was more than \$2.73 billion.

In the years since the Sept. 11 attacks, we've become more accustomed to making our donations online. As of Dec. 13, 2005, the American Red Cross had received online donations totaling \$453 million for Hurricane Katrina relief—it has received \$1.84 billion for all of the 2005 hurricanes.

More than half of all the donations to various charities for Hurricane Katrina relief were received online, according to Trent Stamp, executive director of Charity Navigator (www.charitynavigator.org), an organization that evaluates and rates more than 5,000 charitable organizations.

Sarah Marchetti, spokesperson for the American Red Cross, says, "There's definitely been an increase in online donations in the past five years. For 9/11, we received 3% of all donations online; we received 28% online for tsunami relief, and 24% for the hurricanes. That amount jumped to 51% for the earthquake that devastated Pakistan



in October 2005." Marchetti explains that although the percentage seems lower for the gulf-coast hurricanes and the 9/11 relief funds, the figures are misleading. Corporations that collect from employees and frequently match funds send enormous donations by mail, which makes the percentage of online donations appear smaller.

Choose Wisely

Eric Kessler, principal advisor of Arabella Philanthropic Investment Advisors, says to find out what percentage of donations goes to **programming** (the actual work a charity does to fulfill its mission). Kessler says the percentage will vary according to a number of factors, but if the charity spends less than 65% on programs, that should raise some red flags.

Before donating, visit the Charity Navigator for a breakdown of the charity's Program Expenses compared to its

Administrative Expenses. The Carter Center, for instance, is an organization that works to fight diseases and poverty worldwide. It has earned a 4-star rating from Charity Navigator because it spends only 4% of what it takes in on administrative costs, and the American Red Cross, another 4-star charity, spends only 5.4%. For a list of 4-star charities (the highest rating possible) and an explanation of the rating system, click the Methodology link on the menu at the top of the home page.

Several sites, including Charity Navigator, also post the salary each organization pays its CEO. Kessler says, "Check the CEO's salary. This is a nonprofit. An organization has to spend money to attract the best people, but donors are put off when CEOs are paid an excessive amount."

Many religious-based organizations are not required to file 990 forms (forms the IRS requires tax-exempt organizations to file) with the IRS, so you may not find them at Charity Navigator. For instance, you won't find information on The Salvation Army, but you will find information for the Catholic Social Services and the Lutheran Community Foundation. However, as a reputable charity, The Salvation Army posts its financials on its Web site (www.salvationarmyusa.org). From the menu on the home page, click Financials, and you'll see annual reports and tax information for the last several years. Typically, if you ask a charity for its financial information, it'll be happy to disclose it. The organization needs the continued support of its donors and knows that support is dependent upon the donors' belief that the organization is using the donations as intended.

Online Partners

Donating money online to help victims of the terrorist attacks of 2001, the Asian tsunami of 2004, and the hurricanes of 2005 was easier for donors because of partnerships between charities

such as The American Red Cross and online search engine Yahoo!. Marchetti says it was a serendipitous partnership. "We had just launched our online donor program a month before the 9/11 attacks," she says. "Our servers were unable to handle the response, so Yahoo! donated server capacity and handled donations directly."

If you want to donate online after a disaster strikes, you'll find no shortage of legitimate places to do so. To date, Marchetti says, 21,000 online organizations have asked to collect money for the American Red Cross for Hurricane Katrina alone. She explains that the American Red Cross asks organizations to submit a request, and once approved, the organization selects an American Red Cross banner to display on its home page. Although some organizations that collect money for a third-party use some of the money for their own overhead costs, Marchetti says that the American Red Cross receives 100% of the donations collected by third-parties. "Yahoo! is an official donation site. Others, such as Apple iTunes and Amazon.com, let you add

a donation to your cart and later forward the amount collected to us. In all instances, though, 100% of the donation reaches us."

There's no question that disasters trigger a desire to help, and donating online is a benefit to both the charities receiving the donations and the donors themselves. Rather than waiting to make the donation until you find your checkbook, you can click a link, enter an amount, provide your credit card information, and click Submit. Marchetti says, "Online donating is wonderful because of the immediacy; it allows donors to act on their feelings of compassion right away."

The Less Savory Types

Because disasters elicit such generous responses, and you can so easily donate to charities, online con artists have found ways to route you to sites that will bilk you of a well-intentioned donation and siphon money from its intended recipients.



Take advantage of the resources at Charity Navigator when you research potential charities.

Unfortunately, the problem is widespread. The FBI estimated that at least 2,500 fraudulent on- and offline charities sprang up in the wake of Hurricane Katrina. In September 2005, the FTC (Federal Trade Commission) posted a guide on its Web site called "Thinking Of Victims Of Hurricane Katrina? Here's How To Help" (www.ftc.gov/opa/2005/09/katrina.htm).

Whether writing a check or clicking an online link, donors are advised to earmark charities they recognize. Although legitimate charities may form following a disaster, and they may have good intentions, these upstarts may not have the personnel, equipment, nonprofit status, or necessary connections to actually deliver assistance. The FTC advises you to stick to charities whose names are already familiar. And when you're in doubt, check the Better Business Bureau's Wise Giving Alliance at www.give.org.

When making donations online, Kessler says, "Go right to the site of the charity and type the URL yourself. Don't follow links unless they're from a trusted source." If you're unsure of the URL, go to Google (www.google.com) and search for the charity.

Marchetti says, "When donors want to enter personal information, we [the American Red Cross] direct them to our secure site, which uses high-grade encryption and the https security protocol."

You'll know you're on a secure site when you see the padlock in your System Tray. The padlock indicates the

Subscription Guides

GuideStar.org (www.guidestar.org) has a database of over 1.5 million charities; however, you have to register to use it. Registration for the Basic service is free, but you must disclose personal information, such as name, address, and email address. The information you can see as a Basic subscriber is limited, but it does include whether a donation to a particular organization is tax deductible, what the organization's mission is, and its most recent three 990 tax forms, if the organization was required to

file them. This information tells you how much a charity spends on programming, which is what you'll want to know before making a donation.

There's more information at the Select level, which is \$300 per year, but you still won't have access to financial information. For in-depth financial information and income statements, you have to subscribe to the Premium level, which is \$100 per month or \$1,000 per year if you pay it all at once. These fees are pretty steep for

individual donors, but if you or your organization intend to give substantial sums, it's a good idea to get an organization's financial information first.

The Chronicle of Philanthropy (philanthropy.com) also tracks charitable giving; its subscription-based service costs \$72 per year. If you're not yet sure what you'd like to do as far as charitable giving, however, there are articles and updates you can read on the Chronicle's home page without subscribing. ■

SSL (Secure Sockets Layer) protocol will encrypt any data you enter before it's transmitted over the Internet.

Another way you'll know you're on a secure site is by looking at the URL. For instance, if you'd like to make a donation to The Salvation Army, type **The Salvation Army** into the Google search field and click Search. The first return is the national headquarters (www.salvationarmyusa.org). If you have already researched The Salvation Army and know you'd like to make a donation, click Donate. You have several options: As a United Mileage Plus member, you can donate your miles, which helps The Salvation Army move personnel to areas of greatest need after disasters or reunite a family before the imminent death of a loved one; you may donate money (by clicking the Donate Now link, sending a check, or calling 800/725-2769) or stocks or set up an option for Planned Giving; and you may arrange to drop off (or have picked up) clothing, household goods, furniture, and even your car.

If you've decided to donate online using your credit card, click Donate Now and look at the URL. You're now on an <https://secure3...> site. The "s" in "https" indicates the site is secure and uses encryption standards to securely transmit online transactions.

The FTC further counsels that in order to make the most of your donation, give directly to a charity as opposed to an organization claiming to solicit for the charity. As with the partnerships between the American Red Cross and nearly 21,000 online retailers, search engines, and organizations, there are legitimate sources collecting money for charities. However, if you're not sure or if you're at all suspicious when you're online, take the extra couple of minutes and go directly to the charity's home page.

Kessler also cautions that when you donate online, "you have little ability to earmark funds." If deciding how your donation is spent is important to you, you're better off contacting

someone at the organization and discussing it. "Remember," says Kessler, "that you can be most certain if your money is being used effectively, if it is going to organizations you are personally involved in."

You should never have to provide your personal financial information, other than your credit card number and its expiration date, when making an online donation. If someone asks for bank account numbers or your social security number, be wary. That information can be used to steal your money and/or identity.

And, finally, the FTC advises that you don't send cash through the mail. Writing a check or using your credit card creates a record of your contribution that helps make sure your donation makes it to its intended recipient and provides you with the necessary paperwork so you can deduct your donation at tax time if you want.

The paper trail is good reason to donate online, too. When you make a donation, you'll usually see a printable Web page confirming the amount and date of your donation. Print it for your records. Additionally, if you've been asked to enter your email address, you should receive an email confirmation, too, within several minutes of submitting your donation. At the end of the tax year, you'll also receive a statement for tax purposes.

Give A Little Bit

Making donations online is easy—far easier than writing a check, addressing an envelope, and finding a mailbox. There are a number of worthy organizations that will put your money to good use; just make sure you do a little research before sending your money so you're sure the charity is legitimate and that you agree with its goals. ■

BY KATHRYN DOLAN

Ask Questions

By its nature, donating to alleviate the suffering caused by an earthquake or hurricane requires a sense of urgency. The organizations that provide relief need the money right *now*. But if you'd like to give on a regular basis and aren't sure what charity appeals to you the most, do a little research. GuideStar.org (www.guidestar.org), a nonprofit that provides donors financial information about the organizations they plan to give to, lists 10 tips for giving wisely, and we'll highlight three of the most important, whether you're giving online or writing out a check.

1. Clarify your values. Why do you want to give to this organization, and what do you hope to accomplish—or hope the charity to which you intend to donate will accomplish? Are you hoping to alleviate world hunger? Help in the fight to eradicate various childhood diseases? Promote animal welfare? This will help you narrow the field of potential organizations.

2. Identify your preferences. And as you ask yourself questions to clarify what you find important, you should also ask where in the world you'd like to do the most good. Do you want to help a charity that works in your neighborhood, city, or state? Or are you hoping to help with a problem in a far-flung country on a distant continent?

3. Get the facts. Don't be swayed by a slick brochure or fancy home page. Make sure you know the organization's mission and how it intends to achieve its goals. Check financial statements—or search one of the many online databases. Although not required to do so by the IRS, most nonprofits aim for transparency and release their administrative costs and spending information so donors know exactly what their donations are going to be used for.

10 Terrific Toolbars

With the widespread success of Google's toolbar, many companies have developed their own toolbars. However, most of these toolbars are little more than marketing tools designed to steer surfers to a sponsor's site or search engine. A select few, however, aim to make your surfing more productive and pleasurable.

The following 10 toolbars represent a diverse offering of the best of what is currently available. All of these toolbars are configurable with Internet Explorer, although many are also agreeable with other popular browsers. And the price is right—free.

One caveat: Make sure you read the toolbar's privacy policy. Some toolbars collect personal information for marketing reasons, tracking your online habits, and a myriad of other information. Most of the toolbars we list here do not collect personal information, but the few that do have reasonable privacy policies. As always, make sure you use your antivirus software to scan any software you download.

Google Toolbar 3.0 toolbar.google.com

The toolbar that started the craze is still a top contender. Google's bar allows you to access Google features from any Web page, as well as the ability to search within the pages of

any site with the Google search engine. This handy toolbar also offers a pop-up blocker, automatic forms filler, spell-check, translator, and an auto-link feature that turns street addresses into links to online maps. In addition, you can integrate the software with the Google Desktop Search that makes it easy to browse your computer and launch applications. A Firefox version is also available.

Yahoo! Toolbar toolbar.yahoo.com

Yahoo!'s toolbar offers a pop-up blocker, as well as an anti-spyware utility. You'll find that easy access to Yahoo! Music Engine and other various Yahoo! services, including news and weather, are nice extras. However, an account is required to use many of its features. Yahoo! has released a new version of the toolbar for the popular Firefox browser, but it lacks some of the features of the Internet Explorer model. Yahoo!'s message boards provide welcome support for any software questions.

A-ToolBar 3.0

www.metaeureka.com

This formidable toolbar boasts an incredible 50 tools. As one might expect from such versatility, however, some of the features are less useful than others. Biorhythm charts and a love calculator might not be at the top of your list, but others, such as Desktop search, dictionary, and a currency converter, are certainly handy. Moreover, the full suite of 20 network and Web tools will fill advanced users with joy. Pop-up blocking, metasearching, and the ability to add new search engines make A-ToolBar an A+ in our book.

Quero Toolbar

www.quero.at

Slim and simple, Quero keeps the focus on searching instead of offering dozens of confusing and seldom-used tools. And rather than take up valuable Desktop space, Quero replaces the standard address bar of Internet

Explorer. Choose from 12 useful search engines while the built-in Flash and pop-up blocker suppress unwanted ads. Quero also provides keyboard shortcuts and find-as-you-type functionality to IE. And for those whose eyesight needs a bit of a boost, the built-in zoom is a welcome relief.



Pull-down menus showing just some of the choices available from the extensive array of tools in A-ToolBar.

jetToolBar

www.cowonamerica.com

This well-designed toolbar sits unobtrusively on your Desktop, allowing you to easily organize, find, and launch programs, utilities, and bookmarks. More than a dozen tabbed categories of shortcuts for applications allow convenient access. Furthermore, the generous allotment of seven sizes of buttons and categories to choose from makes for easy readability. Fully

customizable, jet's drag-and-drop features are ideal for quickly adding and removing buttons and categories. You can dock the toolbar on any side of the screen. If you have a mic, you can even run the program with your voice.

Advanced Searchbar

www.advancedsearchbar.com

Although this toolbar's name probably won't grab your attention, its features certainly will. A vast selection of about 100 search engines, 60-plus news providers, and three-dozen email clients awaits you. Advanced Searchbar integrates with many popular spyware-removal programs, blogs, and instant messengers. Icons allow easy access to scores of applications, including the built-in file shredder, RSS (Really Simple Syndication) reader, calculator, pop-up eliminator, weather reports, driving directions, and Web page translation.

Viewpoint Toolbar

www.viewpoint.com/pub

The Viewpoint Toolbar provides a unique and timesaving way to surf by allowing you to preview search results with real-time thumbnails and annotated text. You can easily save, search, and share favorites using the same graphic approach. DogEar marking makes it easy to recall and bookmark important sites. Additional features include pop-up blocking and a digital photo manager.

Furl Toolbar

www.looksmart.com

Anyone who has ever felt the frustration of a short memory or a dead bookmark will appreciate the thinking

behind Furl. This software is a revolutionary approach to finding (and finding again!) stuff on the Web. Furl transforms the Web into your personalized Web by storing a whopping 5GB of your surfed pages on servers that are accessible from any Internet-connected

computer. You can make the pages public or keep them private, as well as annotate and search them—making it ideal for students and researchers. Install Furl as a toolbar or in your bookmarks.

Copernic Meta

www.copernic.com

This excellent search agent is a Web researcher's dream. Quickly and easily metasearch the Web for images, audio, multimedia, news, auctions and more from the browser toolbar. Don't have your browser open? No problem.

Perform the same search from any application, anytime via the Copernic box in the Windows taskbar. Copernic features specialized categories such as Web, Shopping, Dictionary, and Thesaurus that query multiple search engines at once. You can easily add and manage custom search engines, assign keyboard shortcuts and find info by highlighted keywords in pages.

Blinkx

www.blinkx.com

Nobody wants strangers to read the contents of his PC, but what if that stranger were a computer? Would you call that stranger a friend? Well, you might if it were Blinkx. This amazing software uses advanced algorithms to assess the info you're viewing and then retrieves additional relevant content from Web pages, news articles, video, and more, in addition to files

Decisions, Decisions

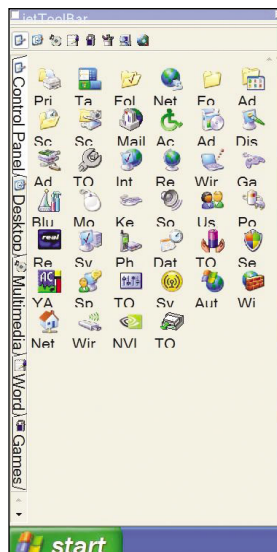
Can't decide which toolbar to download? Perhaps you want them all—or none! The ToolbarBrowser (www.toolbarbrowser.com) can solve either problem. If you are concerned about limited screen real estate, this free software uses tabbed controls, making it simple to manage multiple toolbars. As if that weren't enough, this handy tool actually lets you build your own toolbar. Now you can take all of the best features of other toolbars and easily create your own custom program. Best of all, ToolbarBrowser's Web site offers extensive help, including a tutorial, FAQ, and support forum. Although the software only works with Internet Explorer, you can write toolbars in HTML (Hypertext Markup Language), XML (Extensible Markup Language), Java, or even Flash. Perhaps your toolbar will become the next big thing. ■

and email already on your PC. You may never need a keyword or complicated search method again.

Something For Everyone

With so many toolbars available, there's sure to be one for just about everybody. In fact, you may have trouble deciding on just one. One thing's for sure, though—there are plenty of terrific toolbars to help make you more productive. The benefits are numerous and diverse, including easy access to search engines, news, weather, stock tickers, blogs, video, and podcasts. Even novel ways of searching and organizing that information on your computer are now available. So what are you waiting for? Get downloading. ■

BY KYLE BAMFORD



An expanded jetToolBar offers convenient access to almost everything on your computer.

Enhance Your Time Online

How Much Power?

Problem: I have built my own PC, but it seems to be underperforming. My friend suggested that I may not have a large enough power supply. How can I tell?

Solution: One of the biggest reasons for assembling your own PC is to get the biggest bang for your buck. Selecting the proper power supply can be tricky because you don't want to overspend on power you don't need, but a weak supply can cripple your computing muscle. Journey Systems has a power supply calculator on its site (www.jscustompcs.com/power_supply), and it's pretty detailed. Just select your processor type and your various add-ons, and it'll calculate your recommended minimum power supply in wattage.

Word Worries

Problem: I'm trying to remember a particular word. I know what it means, but I can't remember what letter it starts with to look it up in the dictionary.

Solution: On a number of popular online dictionaries, this kind of reverse

look-up is not possible. Most search fields are only set up to search dictionary entries, not the full definitions. But Oxford University Press' Ask Oxford site (www.askoxford.com) is a pro word-search tool. In addition to its English dictionary, Ask Oxford's search queries a quote dictionary, a first name dictionary, and the contents of its site, which include an Ask The Experts section. Sure, you could just go to Google with such a search, but with Oxford, you might be able to trust the result more.

Pretty Pictures For Your Desktop

Problem: I'm tired of all the Desktop images that came with my computer. Is there a place with some serious alternatives?

Solution: There are some stunning free images on the Caedes Desktop Wallpaper site (www.caedes.net). Caedes is a wallpaper community with thousands of users uploading photography and custom-created images. Many images are available in up to five screen size resolutions, from the



More than milk: This site offers reminders through email, IM, or SMS.

humble 800 x 600 to the massive awe-inspiring 1,600 x 1,200. The site moderators do not allow adult material or copyrighted images, so it's very family-friendly.

Smart Reminder

Problem: My computer calendar program is set to remind me of certain events, but this isn't very helpful when I'm not in front of my computer!

Solution: A new Web site offering a reminder service has popped up, and it's really something to moo about. Remember The Milk (www.rememberthemilk.com) takes an innovative approach to reminding you about tasks and events in your calendar. It can send you an alert message via email or IM (using many of the popular IM services).

And if you are away from your computer, Remember The Milk can send a text message to your phone. Sadly, it doesn't look like you can import events from your existing computer calendar, but if you tend to forget anniversaries, birthdays, and business meetings, you might not have a good excuse anymore.

Digg The News That Others Dig

Problem: Where can I find the hottest tech news stories that everyone's talking about?

Solution: There are tons of technology blogs that link to today's popular stories, but an interesting take on nonhierarchical editorial content is Digg (digg.com). Users can post links to news stories and then other users vote on them depending on how much they "dig" them. Thus, the most popular stories get pushed to the front page. This may not be the best way to aggregate news, but it's an interesting example of how blogging and RSS (Really Simple Syndication) feeds are changing the way online folks consume the news.



Not just a super-powered reference site, AskOxford.com also has word trivia, games, and contests.



Rate It Online Put Your Opinions On The 'Net

Condition, and other features. You can rate your own apartment free.

Edmunds.com

www.edmunds.com

New-car shoppers would do well to check out Edmunds.com's New Cars section before they head to the local dealerships. Each of the site's reviews includes a picture of the car, the MSRP, estimated mileage, reviewer comments, and (of course) ratings. The first rating you'll see when you select a car is the static Editor's Rating. The other is the Consumer Rating, which changes as site visitors toss in their two cents. If you spot a car you've already owned, you can heap praise or complaints on it by clicking the Rate It button and then filling out a short form that lets you rate the car's performance and design. You can also add your own comments.

Epinions.com

www.epinions.com

The Internet can't let you hold, shake, or inspect products up close when you shop online, but it offers something that retail stores generally don't: user reviews. Before you buy that next camera, CD, or backpack, surf on over to Epinions.com and see what other shoppers have to say. Thanks to a series of category tabs that line the top of the main page, you can quickly navigate to the items for which you're searching. Once you find your item, you'll see a star rating that includes five stars. (The number of orange stars indicates the item's overall rating.)

RateMyPet

www.ratemypet.co.nz

So you think Fido's the cutest dog around, do you? Now's your chance to find out whether you're right or the world is wrong. While the Web offers

many pet-rating sites, New Zealand-based RateMyPet stands heads and tails above the rest, thanks to a clean interface, large pictures, and support for user comments. The main page displays a random picture of a pet and a Your Vote bar that lets you select a rating between one and 10. Once you make a choice, a new pic appears, and the picture you just rated moves to the side of the page. Above that picture, you'll see the total number of votes for that picture and the average score. You can upload pictures of your own pets after registering for a free account.

Rate-A-Restaurant

www.rate-a-restaurant.com

Don't let the great service you received last night go unrewarded. If you want to let fellow dining fans know about a great place (or a bad one), you'll love Rate-A-Restaurant's easy-to-use rating system. The site lets visitors rate a restaurant based on multiple items, including Wait Time To Be Seated, Restroom Cleanliness, Service, and whether you plan to return. You can also choose between Rave and Rant to let other viewers quickly determine whether they're about to read a positive or negative review.

Travelocity

www.travelocity.com

Dig up some great hotels and avoid the dingy ones by paying attention to travel sites' ratings. Travelocity, for example, generally displays two ratings for each hotel listing: the AAA (American Automobile Association) rating, if available, and the overall Traveler Reviews rating, which is a scale of one to five smiles. When you click the Traveler Reviews link and select an individual review, you'll find ratings for several categories, including Entertainment, Service, and Dining.

AirlineMeals.net

www.airlinemeals.net

Pleasantly surprised by the food on your last flight? If you happened to snap a digital photo of the grub, you can share your thoughts and pics with the world, thanks to this unusual site. Unlike many other rating sites, which let visitors rate every picture they see, AirlineMeals.net only accepts the rating from the user who submits the picture. Instead, visitors use the ratings, pictures, and user-submitted comments to determine which airlines they prefer and to take a peek at what meals airlines around the world are dishing out. If you've always wondered whether the airline staff gets better meals than the passengers, check out the Crew Meals section.

Apartment Reviews

www.apartmentreviews.net

Sure, you'll probably visit apartments in person before you select your new abode, but it won't hurt to narrow your list by reading online ratings and reviews, especially if you're far away from the location to which you're moving. To that end, Apartment Reviews collects user-submitted ratings on apartments across the country. Simply click the state on the main page map and then choose a city to see a list of apartments and ratings (on a scale of 1 to 5). The list also indicates what percentage of the reviewers recommend the apartment. Each user's review includes an overall rating and individual ratings for Security, Parking, Management, Unit

That's News To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month we scour tens of thousands of news-groups and highlight ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month we dig up some particularly opinionated groups.

alt.fashion

If you want to find out what other fashion gurus think about clothes, haircuts, and more, you'll like chatting with this group. Members here will take on almost any topic from a fashion perspective.

misc.consumers

Members here discuss products and trade shopping horror stories. If you want to voice praise or concerns about an item or service, you'll find a sympathetic audience at misc.consumers.

alt.autos

If you're thinking about buying a car and want to know what other auto buffs think of the model, post a message here. Users also trade opinions on car parts and tips for repairing ailing vehicles.

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month, we take a look at media player rating systems.

Windows Media Player 10

www.microsoft.com/windows/windowsmedia/default.mspx

If you regularly rip songs from your CDs to your hard drive or download tunes from online music stores, your computer probably has a rather large, unwieldy collection of music.

Microsoft's free Windows Media Player includes a rating system that lets you quickly spot songs you like.

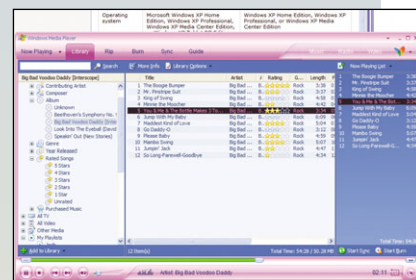
Rating songs is a snap. Once you open the player (in Windows XP, go to Start, All Programs, and Windows Media Player), click the Library tab.

The left Library window displays an array of categories that lets you browse your music in different ways.

For example, you can browse by Artist, Album, or Genre. Click Album and then select one of the albums that appears below it. When the album's songs appear in the middle window,

you'll see five empty stars next to each song under Rating. To assign a rating to a song, simply run your pointer over the stars until you find the appropriate star. Finally, click the star. You'll see that all of the stars up to (and including) the star you clicked are lit.

Assign higher ratings to your favorite songs. (You can assign up to five stars to a song.) Once you've rated several songs in your collection, create instant playlists by clicking Rated Songs in the left window and selecting the song ratings you want to hear. Each of the rating playlists includes songs that carry the specified rating or higher. Windows Media Player 10 supports only WinXP.



Windows Media Player 10's rating system lets you easily separate your favorite songs from album fillers when you organize your digital music collection.

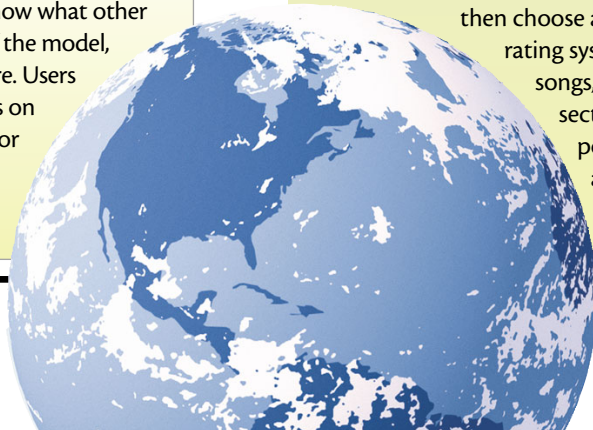
Winamp 5.12

www.winamp.com

Although WinXP users can upgrade to the latest version of Windows Media Player, Win98/Me users will need to look outside the Microsoft family to find a cutting-edge music player. Don't worry if you're still running one of these older OSes (operating systems): You won't need to look far. Nullsoft offers a free version of Winamp that includes a similar rating system to Windows Media Player's five-star system.

As with Windows Media Player, Winamp's song descriptions include a Rating column that sits blank until you assign stars to songs. However, the rating feature isn't quite as easy to use as Media Player's: You'll need to right-click each song, select Rate Items from the context menu, and

then choose a star rating. The player uses a one- to five-star rating system. If you want to listen to only your favorite songs, click the Top Rated playlist in the Local Media section on the left side of the player. Winamp supports Win98 SE/Me/2000/XP. The free version has all of Winamp Pro's (\$19.95) features except the ability to rip songs from CDs or burn songs from the PC's hard drive to blank CDs. ■



A vintage computer monitor and keyboard are shown in a monochromatic, light blue/purple color scheme. The monitor is tilted back, and the keyboard is in the foreground. In the background, several interlocking gears are visible, suggesting a mechanical or industrial theme. The text "The G/HO" is overlaid on the monitor screen.

The G/HO



In The Machine

What's An Operating System, Anyway?

If the processor serves as a computer's brains, then you could say the OS (operating system) is its soul. Without an OS, a computer is just a collection of separate parts that individually serve no useful purpose. Add an OS, and suddenly those components can communicate with one another, work together, and accomplish something meaningful.

The other main benefit an OS provides beyond harnessing computer resources is giving software easy access to those resources. That's why when you buy an office suite for a PC, it won't work on a Macintosh; or when you buy a game for a Palm OS device, it won't work on a Windows Mobile device. Software is written to be compatible with a specific OS, and other OSes simply

can't understand the language that the software speaks.

Same Purpose, Different Products

Most computer users are familiar with Windows, which is the most widespread OS in the world but by no means is the only one. Mac users use Apple's Mac OS, many businesses use an open-source (and often free) OS called Linux, and others can choose from countless other OSes in use.

Your digital mobile phone has an OS, as does your PDA (personal digital assistant), your Nintendo Game Boy, your Sony PSP (PlayStation Portable), and your Apple iPod. In some products, the OS is permanently programmed onto a chip, whereas in others,

such as computers, the OS is a software product that exists independently from the hardware. Your Windows PC, for example, also can run Linux, and the fact that Windows is software instead of hardware means you can upgrade it to a newer OS version without having to purchase a completely new computer.

Inside An OS

OSes may differ, but they all have common components. There's the **kernel**, which is the actual program that lets the OS perform its various duties, and there's the **shell**, which is the interface we use to access the kernel. The kernel provides a common language that applications can use to communicate with the computer's hardware and grants each running application access to that hardware.

The shell determines how we interact with the OS. The earliest home computer OSes had shells that only offered a CLI (command line interface), where users typed commands for the OS to execute. Microsoft's DOS (Disk Operating System) shell—which is still available in Windows XP—is an example of this interface.

Programmers and other experts like CLIs because they make efficient use of system resources and are extremely powerful, but all of that power also makes it very easy for newcomers to do things such as

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Me>cd ..
C:\Documents and Settings>cd..
C:\>dir
Volume in drive C has no label.
Volume Serial Number is E8F1-BE5B

Directory of C:\

11/22/2005  10:40 PM                4,096  005C003F-003F005C
10/19/2005  02:08 PM                4,096  005C003F-003F005C_Backup
11/16/2004  02:31 PM             29,696  25 How to install a video or sound card.d
05
12/07/2004  07:14 PM             9,686,752  61.76_win9x_english.exe
02/27/2004  07:03 PM             1,194,496  8139atx.exe
11/19/2004  11:31 AM                <DIR>  adaptec
10/18/2005  06:50 PM                <DIR>  ana
09/08/2003  08:11 PM             311,296  ATA 2003 poster final 2[1].ppt
04/16/2003  01:01 PM                <DIR>  ATI
12/15/2004  09:33 AM                 28  AUTOEXEC.BAT
12/21/2004  01:15 AM             12,219,249  AUG7QT.DAT
12/21/2004  01:12 AM                 5,671  avgun.log
08/29/2003  03:07 AM             419,546,112  backup.pst
10/20/2003  10:32 PM             802,505,728  backup2.pst

```

We've come a long way from old-school OSes (operating systems) like DOS that forced users to type and memorize long lists of obscure commands.

accidentally delete entire directories. That's where GUI (graphical user interface) shells become useful. These shells use windows, menus, folder icons, and other graphics to visually display items and commands that exist only as text in a CLI shell.

In DOS, you need to type something like `copy c:testfile.txt a:` to copy a file to a floppy diskette, whereas in an OS that uses a GUI such as Windows or Mac OS X you simply use your mouse to drag the file to the icon representing the diskette drive and drop it there. The OS then does the rest of the work for you, which is why GUI shells dominate the consumer desktop market.

Keep It Working

When your OS fails, your computer fails—it's as simple as that. Fortunately, PC users have the option to reinstall their entire OS when necessary, and the articles in this month's feature package will walk you through that tricky procedure. Better still, the articles will tell you how to detect problems before things get out of control, and then you can drag-and-drop indefinitely. ■

BY TRACY BAKER

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FIND MORE ONLINE

For more information about reinstalling WinXP, please see the other feature package articles and the SmartComputing.com articles we listed below.

Start-To-Finish Guide: How To Reinstall Windows
www.smartcomputing.com/pctdec04/reinstall

Hard Drive Roadblocks
www.smartcomputing.com/scmar05/roadblocks

Software Tips & Projects: Slipstream Your Next Windows XP Installation
www.smartcomputing.com/cpujun04/slipstream

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Does Your OS Need A *DO-OVER*?

When All Else Fails, It's Time To Reinstall

Figuring out what's wrong with a computer can be a bit like trying to diagnose a mysterious illness. The symptoms aren't necessarily clear-cut, you need to consider a multitude of components, and it isn't always apparent how these components work together and affect one another. Determining what's causing a system malfunction can be a lengthy, frustrating process—both for you (the doctor) and your computer (the patient).

But there is hope. Before you lose your patience (or patient!) and decide to perform major surgery by reinstalling your OS (operating system), we invite you to look at our diagnostic set of procedures. If your PC is acting sluggishly or applications aren't working properly and you can't figure out what's wrong, this set of procedures can help you pinpoint the cause or causes, eliminate potential trouble spots, and determine the correct medicine and/or therapy to administer.

Diagnose The Problem

Over time, your hard drive becomes cluttered, possibly leading to a performance slowdown or file system corruption. Reinstalling the OS can rid your PC of corrupted or poorly

organized files and let you start over from scratch. But it can be a long, frustrating process, and unless you do it right, you could end up losing valuable data. Thus, reinstalling your OS makes a better last resort than first step.

True, sometimes you can't avoid an OS reinstall. For example, if your PC can't boot into Windows and you don't have a backup, reinstalling may be your only option. Or, if Windows XP starts successfully but continually crashes while you're using a variety of applications, reinstalling WinXP may be the fastest, easiest solution.

But performing a complete system overhaul still may not solve the

problem. An OS reinstall can't fix all errors, such as memory and video card problems, and you might end up with the same problem all over again. We recently experienced a problem with our PC's ability to play DVDs, and after trying numerous software fixes and making multiple calls to the manufacturer's tech support line, we reinstalled WinXP only to again experience stuttering and crashing while using our media player. It wasn't until we replaced the DVD drive that the problem disappeared.

That's why it's important to do all you can to figure out what's wrong with your computer before you reinstall the OS. Plus, many of the suggestions we listed are good maintenance tips you should use regularly anyway. Even if you haven't yet run into trouble, following these suggestions may keep you from experiencing more serious trouble in the future.

Spyware, Viruses & Other Intruders

One of the most common culprits of a lethargic or otherwise improperly running PC is spyware. Spyware is a sneaky category of software that hides in your system and watches what you do. For example, spyware may track your Web browsing habits and relay



A good antispyware application, such as Tenebril's SpyCatcher, can eliminate the risk of spyware becoming permanent residents of your PC and slowing down your system.

that information back to a variety of businesses, some of which use that data to tailor specific advertisements to match your perceived areas of interest. The most effective spyware runs without making you aware that it's even there; or, you may only notice unwanted pop-up ads, a hijacked Web browser, a sluggish PC, or other odd, unwanted behaviors.

And unfortunately, you may invite spyware to install itself onto your system without realizing it. Manufacturers have been known to bundle spyware with legitimate programs, and when you download and install those programs, you also may be downloading and installing spyware.

If you haven't yet done so, it's wise to install at least one antispyspyware application on your PC and then perform a full-system sweep to identify and destroy any unknown programs hurting your system's performance. Be sure to schedule ongoing sweeps in the future, too. There are dozens of high-quality programs on the market, including Ad-Aware SE Personal (free; www.lavasoftusa.com), SpyCatcher (\$29.95; www.tenebril.com), and Spy Sweeper (\$29.95; www.webroot.com).

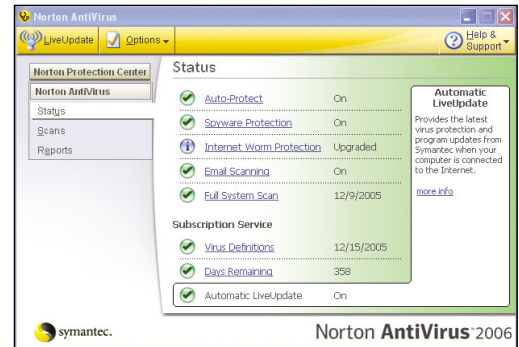
You'll also find antispyspyware bundled with antivirus software, including Symantec's Norton AntiVirus 2006 (\$39.99; www.symantec.com) and McAfee VirusScan (\$39.99; www.mcafee.com), which brings us to the next item on our list: anti-virus software.

A virus can destroy your data, slow down your PC, or stop system operations, and most PC users these days know how important it is to install an antivirus application that will protect your system from these malicious intruders. But simply installing anti-virus software isn't enough. So, before you go through the drastic step of reinstalling your OS, make sure your system isn't being compromised by a virus that could be wiped out by a *properly performing* antivirus application. The reason we italicize "*properly performing*" is because we want to

emphasize the importance of keeping your antivirus application up-to-date.

Although it's comforting to see the antivirus application's icon on your Desktop, that icon isn't a permanent symbol of a virus-free PC. The icon doesn't tell you how current your virus definitions are, nor does it tell you about any viruses that may have sneaked onto your system when the software was temporarily shut down, such as when you deactivated all running programs while installing a new program. Check your software documentation for instructions on how to run scheduled definition updates in addition to full-system scans and then perform both of these tasks regularly.

you install programs and files, uninstall applications, and simply use your PC as it was intended, your hard drive gradually becomes more and more untidy, leading to a sluggish system. A good cleaning, however, may be able to dramatically improve your PC's



Don't forget to update your virus definitions regularly.

Clean It Up

Although spyware, viruses, and other insidious malware may litter your hard drive, they aren't the only cause of virtual gunk. Over time, as

performance, and you have the tools right at your fingertips.

WinXP includes a utility called Disk Cleanup, which cleans debris such as temporary Internet files, setup files, items in the Recycle Bin, and

System Restore Saves The Day

If your PC is acting up—or slowing down, as the case may be—you may have noticed a particular point in time when the problem began. Wouldn't it be nice to go back in time, to a moment before your computer began showing signs of trouble?

Well, you can. That's what System Restore is all about. System Restore is a tool that lets Windows return to a previous configuration. It monitors Windows

XP's (and Windows Me's) critical files, such as the Windows Registry, and regularly takes snapshots of your system. That way, if your system starts malfunctioning, you can use System Restore to return your system back to a time, called a **checkpoint**, when it functioned properly. Plus, using this process still preserves your personal data—even personal files created after the restoration point (although, as always, we recommend

that you back up your data regularly.)

To use System Restore, open the Start menu and click All Programs, Accessories, System Tools, and System Restore. The utility guides you through the process of restoring your computer to an earlier time or manually creating a checkpoint. Select a date, and if more than one option exists on that date, choose a restore point. Click Next twice. Within a few minutes, depending on the complexity of your system, you will travel back in time to a less-troubled era. ■

more, as well as compresses old files. Every few weeks, we recommend that you run Disk Cleanup. Open the Start menu and click All Programs, Accessories, System Tools, and Disk Cleanup. Launch the application and follow its on-screen instructions.

The System Tools folder contains another useful cleaning utility: Disk Defragmenter. Whereas Disk Cleanup rids your system of unneeded clutter, Disk Defragmenter organizes your hard drive so that each file's clusters are contiguous, which decreases the amount of unused clusters left between files. Defragmenting your drive is a much longer procedure than one of Disk Cleanup's tasks, and although you won't need to run Disk Defragmenter as often as Disk Cleanup, doing so can lead to a smoother system performance.

Advanced Procedures

So far, we've covered only simple cleaning tools, but depending on your PC's performance, a more advanced cleaning may be in order. That's where the Registry comes in. The Registry is a database of all a computer's settings, and if it becomes damaged, WinXP may crash, refuse to load, or otherwise malfunction. Getting inside the Registry and cleaning out its clutter may restore WinXP to its original shape and obviate the need for a complete OS reinstallation.

But cleaning the Registry is a complicated task (though not nearly as complicated as a complete system reinstallation), and you may not want to tackle it on your own. You can, however, use a third-party program, such as

Registry Mechanic (\$29.95; www.pctools.com) or Registry Medic (\$29.95; www.iomatic.com).

If a thorough cleaning still doesn't do the trick, your WinXP installation CD-ROM has a couple of utilities that can help repair missing or damaged files. New with WinXP, Microsoft introduced a tool called In-Place Upgrade. This tool replaces WinXP files and restores them to their pristine condition, and it promises to do so without deleting your files. (But, as with any repair of this magnitude, we still recommend that you first back up your important files as a precaution.)

Essentially, you insert your WinXP installation disc, choose the option for setting up WinXP, and follow the instructions for an upgrade. You'll find

the complete instructions for using In-Place Upgrade on Microsoft's Help And Support site at support.microsoft.com/?kbid=315341. If you decide to use this tool, however, be prepared for an hour or so wait because that's the amount of time it took us to perform an In-Place Upgrade.

The other tool on WinXP's installation disc that's worth mentioning here

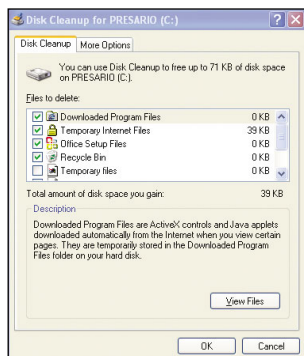
is the Recovery Console. The Recovery Console is designed to help you restore WinXP when some of the more drastic options are not available, such as when you can't start WinXP in Safe Mode, or when you receive a nasty "Unable to Load Device Driver" error message during your PC's startup. But we don't recommend that you try this option unless you're extremely comfortable with computer commands because the process is long and complicated. Actually, in many cases, our preference is to forgo the Recovery Console process and instead perform an OS reinstallation because it forces us to weed out some of our system junk and is a more straightforward, albeit longer (typically), process.

Finally, if you've been through all of these fixes but nothing seems to help, you may want to consider getting some help from a "real computer doctor" before you perform a full system reinstall. It's possible that your computer shipped with a third-party application that analyzes and debugs PC problems. For example, PC Doc Pro (\$29.95; www.pcdocpro.com) and PC-Doctor For Windows (bundled with new PCs by various manufacturers, including HP; www.pc-doctor.com) can help you track and diagnose errors. Depending on the software, the application may even be able to test hardware devices (such as a video card) or test your motherboard.

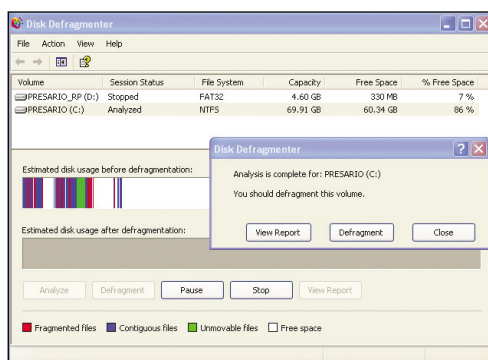
Then, if after running all of these checks you realize that an OS reinstallation is still your best chance at a cure, don't worry: We've put together some helpful articles that will walk you through the process. For step-by-step instructions, see "First & Foremost: Back Up" on page 67 and "Start Over" on page 70.

Sometimes a transplant is the only solution. Besides, the medicine is easier to swallow when you know it's the right cure for your PC woes. ■

BY HEIDI V. ANDERSON



Disk Cleanup is a simple yet effective tool for ridding your hard drive of unnecessary clutter.



Over time, your hard drive becomes fragmented. That's why you should use Disk Defragmenter to place file clusters in contiguous groups for better performance.

First & Foremost: *BACK UP*

An Insurance Policy For Your Priceless Files

There's no such thing as an easy OS (operating system) reinstallation, even with Windows XP. Optimally you should wipe the hard drive completely clean by reformatting it, thereby giving WinXP a clean slate to work with so PC problems from the past don't come back to haunt you. Even if you simply reinstall WinXP on top of itself, there's no guarantee of success, and that's why having a good backup plan is so valuable.

Think of all the files you have on your computer right now: Important emails, financial information, calendars, work documents, Web browser bookmarks, and countless others that would be difficult (if not impossible) to restore. Getting all of these files over to your new WinXP installation is a chore, but backup software eases the pain.

Make A Backup Plan

Before reinstalling WinXP, write down all of the things you do using the computer. Make sure you include everything in the list, including stuff such as editing photos, listening to downloaded music, playing games, visiting certain Web sites where you

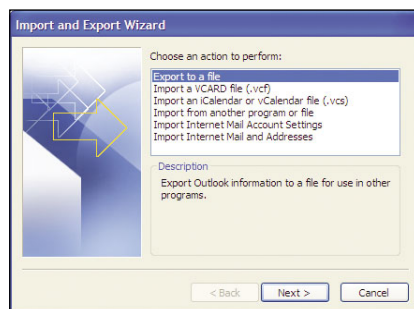
have a subscription, etc. In addition, write down the names of all of the programs you use to accomplish these tasks. This list gives you a good idea of the types of files you need to back up, beyond the usual suspects such as the My Documents folder.

When you're reinstalling an OS, there's really no need to back up your entire hard drive. All of your Windows applications are tied directly to the existing installation of WinXP, so when you reinstall WinXP, you'll naturally need to reinstall all of those programs. Be sure to have your original application discs and serial numbers handy for the reinstallation process. If you've downloaded any software instead of buying it on disc,

be sure to include your downloaded copy in your list of items to back up. If you can't find the download, at least try to dig up the serial or registration number, as you'll likely be able to redownload the software and reactivate it.

Create a central backup folder that is easy to find and use it to store copies of all the stray files you find that you want to keep. We recommend opening My Computer from the Start menu or Desktop, double-clicking the icon that represents the hard drive (usually C:), right-clicking an empty area within the folder window, expanding New, and clicking Folder. Name the new folder "Reinstall Backup" and then use the mouse's right button to drag it to the Desktop, release the mouse button, and click Create Shortcuts Here. Now you can drop things into the folder using the convenient Desktop shortcut, and when your backup software wants to know where the backup folder is, simply direct it to C:\REINSTALL BACKUP.

Also, check the applications you regularly use to see if they let you create backup files directly from their interface, which you can then import back into the software when the reinstallation process is complete. Email applications such as Microsoft



Many programs, such as Outlook Express 2003, let users export application data to a handy backup file.

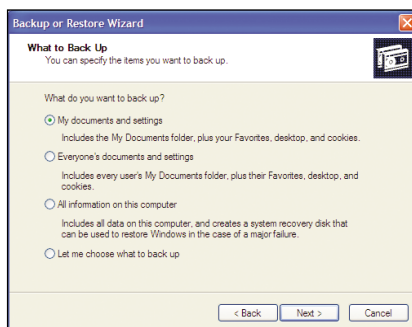
Outlook are great examples of this because most of them let you back up your email, address book, calendar, and other data into compact files that you can place in your Reinstall Backup folder.

Use WinXP Backup

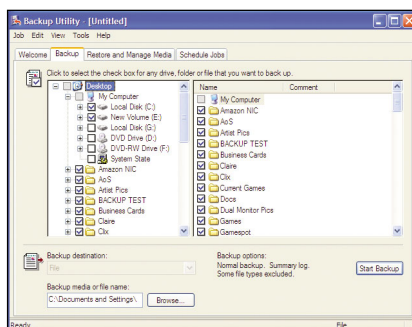
WinXP comes with a basic Backup utility that should be sufficient for most people. It's installed by default in WinXP Professional, but WinXP Home users may not realize it exists. To install it on WinXP Home systems, insert the installation CD-ROM in the computer's optical drive, open My Computer, double-click the icon that represents the optical drive, and navigate to `D:\VALUEADD\MSFT\NTBACKUP` (where *D* represents the letter assigned to your PC's optical drive) on the installation CD-ROM. Then, double-click the `Ntbackup.msi` file, follow the on-screen prompts to install the utility, and reboot the computer.

To launch Backup, open the Start menu and click All Programs, Accessories, System Tools, and Backup. By default, the utility launches as a wizard, which is easy to use but doesn't offer as much power as Advanced mode. If you want to use the wizard, click Next, select the Back Up Files And Settings radio button, click Next, and select the radio button that corresponds with the type of data you want to back up.

The My Documents And Settings radio button lets you back up everything in My Documents, along with Internet Explorer Favorites, Desktop items, and IE cookies (small text files that store passwords and other Internet settings that various sites use). If you select this option, click Next, give the backup a unique name in the Type A Name For This Backup field, write that name on a sheet of paper, and then use the drop-down menu or Browse button in the Choose A Place To Save Your Backup section to tell WinXP where you want to store the data.



Backup's wizard guides you through the backup process, but it isn't very powerful.



If you know where all of the files you want to back up are, use Advanced mode to direct Windows to their locations.

Note that this software cannot back up data directly to a recordable CD or DVD, so if you use it, you'll need to back up your data to a hard drive or a removable drive (such as a Zip drive). Click Next, make sure the summary looks OK, and click Finish to create the backup. Once the backup is complete, you can then copy it to a recordable CD or DVD using WinXP's bundled burning applications (Windows Media Player, for example) or the software that came with your recordable/rewriteable drive.

Although the Everyone's Documents And Settings radio button works identically to the My Documents And Settings radio button, the former is meant for every user account stored in WinXP and is therefore recommended if multiple people log onto the computer using different accounts.

If you really want to play it safe, select the All Information On This Computer radio button, which also

works like the My Documents And Settings option but backs up the entire hard drive and creates a system recovery diskette that you can use to restore WinXP to the saved settings should disaster strike. WinXP Home users should note that although the recovery disk option is available, it is not supported nor does it work in WinXP Home.

The final radio button is Let Me Choose What To Back Up, which brings up an interface that's similar to the one used in Advanced mode. Expand items in the left Items To Back Up pane by clicking the plus signs (+) next to them or clicking folders in the left pane to display the folder's contents in the pane on the right. Just select the checkbox next to each folder or file you want to back up (make sure to include `C:\REINSTALL BACKUP`), and you'll see it added to the list of items that's copied when you click Next. Beyond that, this option works just like the My Documents And Settings option.

In Advance

Wizard mode is great for people who want to take baby steps when backing up data, but clicking the Advanced Mode link when the Backup utility loads is far more efficient.

Choose the Backup tab, use the left pane to open folders or to place check marks next to folders you want to back up, and use the right pane to put check marks next to individual files you want to back up if you don't want to back up the entire folder. Click Browse at the bottom of the dialog box to tell WinXP where your backup disc or drive is, give the file a name, and click Save. Click Start Backup, enter a description if you want, and click Start Backup again.

Restoring Data

After you reinstall WinXP, place your backup disc in the drive (or make sure the backup drive where you stored

the data is installed) and run the Backup utility. (WinXP Home users will have to reinstall Backup if they haven't done so already.) Click Next, select the Restore Files And Settings radio button, and click Next. Click Browse, click Browse again, navigate to the backup file (which ends with the .BKF extension), click the file's icon, and click Open. Click OK, click the name of the backup file in the left pane, select the checkbox next to the folder in the right pane, and click Next.

Once you click Finish, the utility will restore the files to the location they were saved in under the old Windows installation. If you want to put them somewhere else, click the Advanced button, use the drop-down menu to select Alternate Location, click Browse, and tell Windows where the files should go before clicking OK and Next. Select the Leave Existing Files radio button, click Next, click Next again, and click Finish.

Third-Party Alternatives

The WinXP Backup software should do the job for most people, but there are far more powerful and user-friendly backup utilities out there if you need extra help. Some are very specific in what they do, such as Genie Games Backup (free; www.genie-soft.com/products/gbmgames). Others, such as Cobian Backup (free; www.educ.umu.se/~cobian/cobianbackup.htm), seem to do nearly everything and are far superior to Microsoft's bundled utility.

To use Cobian Backup, double-click the free download file, select the I Accept The License radio button, click Next, select the I'll Educate Myself And Read The FAQ checkbox, click Next, click Next again, select the As An Application No Autostart button, click Next, and click Done.

Also, click Unblock if WinXP's Firewall displays any messages. Then, open the Start menu, choose All Programs, click Cobian Backup 7, and click another Cobian Backup 7 listing.

Unless security is a big issue or storage space is at a premium, leave your data uncompressed and unencrypted when reinstalling it.

Click Task and then click New Task. Leave everything alone on the General tab and click the Files tab. Click the Drag'n'Drop From Explorer link and drag and drop all of the folders and files you want to back up into the Source area to create one big backup list. If you accidentally include something you want to remove from the list, click its entry to highlight it and then click the red X icon to the right of the Source area.

To tell the program where to put the backup files, drag and drop the icon for your backup device into the Destination area, or click the folder icon to the right of the box to manually search for the device. As with

WinXP's Backup utility, the software won't back up files directly to CDs or DVDs; for that, you'll need to invest in commercial software, such as Handy Backup (\$30 and up; www.handybackup.net). Or you can back up your data to an external hard drive, secondary hard drive, or another computer located on your home network.

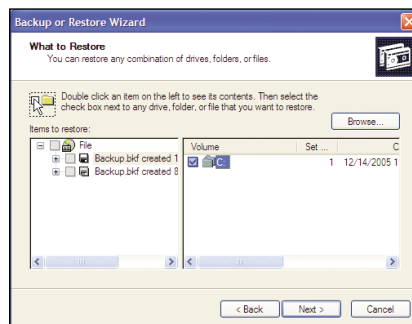
Click OK, click Task, and click Run All Tasks Now. You can create more backup tasks, or you can double-click the name of an existing task to modify it if necessary before completing the final backup.

Using the options we just recommended, Cobian makes carbon copies of your data onto the backup device, retaining all of the folders and subfolders with the data you selected. That means restoring the data after the reinstall requires only that you drag and drop it from the backup media to the hard drive.

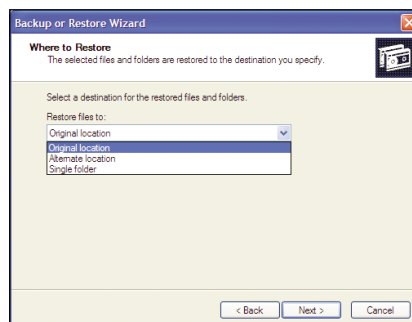
Complexity Isn't Always Better

There are plenty of choices when it comes to backup software, but we recommend that you keep it as simple as possible when preparing to reinstall an OS. Features such as file compression, which packs data down so it consumes less storage space, or encryption, which encodes data so that only those with a password can access it, are great, but they also add several steps to the backup and restoration processes where things can go wrong. Unless security is a big issue or storage space is at a premium, leave your data uncompressed and unencrypted when reinstalling it. You can worry about those issues later, after you know everything is working again. ■

BY TRACY BAKER



When you restore files using Backup, the utility places them in exactly the same folders they were in when you made the backup file.



If you want to restore files to different locations, click the Advanced button during the restore procedure to access this drop-down menu.



START OVER

A Step-By-Step Guide For Reinstalling
Or Repairing Windows XP

Human nature demands that we avoid the unpleasant, whether it involves cleaning out the garage, shoveling a snow-covered driveway, weeding the garden, or spending quality time with the in-laws. Certain computer-related tasks also fall into this category, but perhaps the most notorious is reinstalling Windows.

Many people have an unrelenting fear of reinstalling their OSes (operating systems), but Windows XP makes the process far easier than the complicated steps required by previous Windows versions. This easier process is a valuable feature, too, because occasionally reformatting your hard drive and reinstalling Windows can return your system to like-new performance levels, and repairing Windows can help eliminate OS-related problems that accumulate over time.

You can choose one of two paths when reinstalling Windows, and the path you choose should depend on the amount of work you're willing to perform for the reinstall, because although one method is more effective, it also consumes more time and requires more work. The method that's intended to be easier isn't a full reinstallation of Windows but is instead a repair process that simply replaces existing

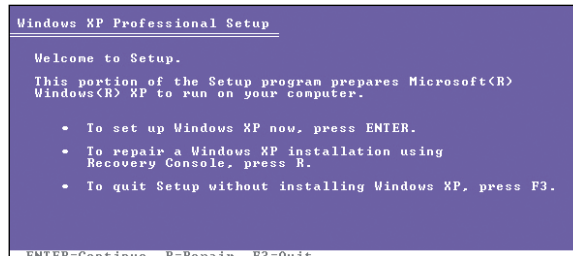
system files on your hard drive with the original files from your WinXP installation disc. The more complicated method requires you to reformat your hard drive and install Windows from scratch. We'll discuss both methods here to help you decide which is best for your situation.

First Things First

Before you begin, understand that reinstalling Windows isn't necessarily a cure-all for problems caused by flaky software, malfunctioning hardware, or malware infections. In fact, the repair method could even introduce more problems, and the clean method won't fix problems specific to a particular application or hardware device. However, if thorough troubleshooting reveals that problems cannot be fixed without reinstalling Windows, it's usually worth the time, effort, and risk to repair or reinstall Windows.

Whether you're performing a repair installation or a clean reinstallation, it's imperative that you back up all of your important data on a recordable

CD or DVD, a second hard drive, or a removable USB drive or other flash media. If you have a Web-based email account that includes plenty of storage (Yahoo! Mail and Google's Gmail each provide at least 1GB of storage per account), consider sending your

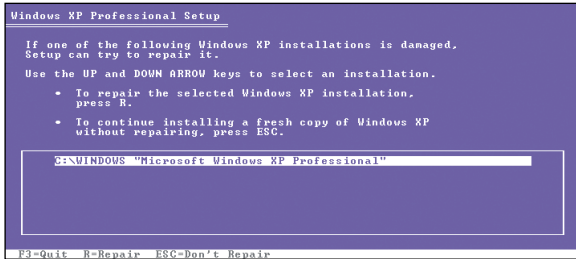


Although you'll see an option for repairing Windows on this screen, ignore it and choose the first option. You'll be able to select another Repair option later.

important files there as a backup to your backup in case you have trouble with the backup media later. Back up all of your banking and financial records, work and personal documents and projects, digital photos, music files, browser bookmarks, email (including addresses and other contact information), calendar data, and other important files.

In addition, write down any settings you'll need to reconfigure later,

including network settings and Internet login information. Check to make sure you have all of your software discs because you might need to reinstall programs later (this step is required if you're performing a clean installation), plus it's a good idea to



Be sure to select the Repair option on this screen to keep all of your programs and settings intact.

write down all of your currently installed programs so you remember what to install later. You also should have installation discs for all of your hardware devices, but if you don't, check the manufacturers' Web sites for installation and driver utilities that you can download and burn to a disc. Although WinXP can recognize and install most devices, it will hit an occasional snag that you can remedy by supplying drivers yourself.

The following instructions are intended for owners of the full version of WinXP Professional or Home Edition. If you have only restoration discs that were included with your computer, you'll need to follow the instructions included with those discs because the process varies from the standard Windows repair or reinstallation procedure. Depending on your restoration discs and software, you might have options to cleanly reinstall Windows or simply to restore only important Windows files. These options can be similar to the following procedures, but the restoration software will walk you completely through the process.

Perform A Repair Installation

Windows versions prior to WinXP let you reinstall the OS over a previous

installation, but WinXP takes a different route, letting you repair your existing installation. This method is intended to preserve your existing software and settings, and for many users, it effectively fixes problems that can plague WinXP installations. But for others, the repair method doesn't fix problems and often causes more trouble because the files that the method uses as replacements are older than the files on the hard drive (assuming that the existing installation was regularly patched with updates from Microsoft).

You can roll the dice and hope that the repair method works as advertised, but be prepared to use the clean reinstallation process we discuss later in this article if major problems occur. Another option you can use to avoid reinstallation problems is slipstreaming;

see our "Create A Slipstream Disc" sidebar for more details.

Repairing an existing WinXP installation is as easy as reading directions and clicking buttons because the OS will walk you through the entire process. To get started, insert your WinXP Pro or Home Edition CD-ROM into your optical drive and restart your computer. If you see the "Press Any Key To Boot From CD" message, press the Spacebar to start the installation. If your computer skips this message and boots directly into Windows, restart your computer, enter your BIOS (Basic Input/Output System), and change the first boot device to your optical drive. If you're not sure how to do this, check your PC's users manual or the motherboard manual for instructions about entering the BIOS and making this change.

After booting from the WinXP CD-ROM, Windows Setup will inspect your computer's hardware configuration and eventually display the blue Windows XP Professional Setup (or

Create A Slipstream Disc



On top of other problems you might face while performing a repair installation of Windows XP, you may find that doing so replaces newer system files with outdated ones. Although some users have no problems while reinstalling Windows and then reinstalling major updates such as service packs, others encounter more problems than they had *before* they reinstalled Windows. One way to avoid this mess is to reformat your hard drive and install WinXP

from scratch, but there's also another option you can use that'll let you safely reinstall Windows without reformatting.

Known as **slipstreaming**, this advanced technique incorporates files from the most recent Windows service pack directly onto your WinXP installation disc (or rather, a new one that you'll create). This allows you to install WinXP complete with the latest updates so that you won't run into conflicts with older files and you'll be

instantly up-to-date after the installation.

Slipstreaming is a rather complicated process, but several excellent online guides walk you through the process from beginning to end. The most useful of these is Paul Thurrott's slipstreaming guide (www.winsupersite.com/showcase/windowsxp_sp2_slipstream.asp), which features extensive directions and screen shots that illustrate every step. Although a slipstreaming disc takes quite awhile to create, it'll well worth the effort when you consider that it helps you avoid problems with reinstallations. ■

Windows XP Home Edition Setup) screen. Press ENTER to set up WinXP now (*don't* choose the To Repair A Windows XP Installation Using Recovery Console, Press R option), press F8 to agree to the license agreement, and when the next screen appears and asks if you want to repair the selected WinXP installation, press R. (If the repair option doesn't appear on this screen, Windows probably can't be repaired and will require a clean installation; see the next section in this article to perform a clean installation.)

On the next screen, Windows will examine your hard drive and then follow with screens indicating that it is preparing files, copying files, and initializing the new WinXP configuration. Finally, the Setup program will reboot your computer. When your computer restarts, *don't* press any keys if you see the message which states, "Press Any Key To Boot From CD."

If the program is able to immediately repair your existing Windows installation, it will display the Windows Desktop. If not, you'll see windows that appear similar to those that display during the standard installation process, but none that require input on your part, and the Setup program will continue the repair process on its own until it finalizes and reboots your computer. Again, *don't* press any keys if you see the "Press Any Key To Boot From CD" message.

As WinXP restarts, a Display Settings dialog box will appear, informing you that Windows will automatically adjust your screen resolution. Click OK, and if you can read the following dialog box, click OK to continue. Finally, WinXP will display a Welcome Wizard that prompts you to specify user information, followed by the standard Welcome screen and then the Windows Desktop.

Because the repair installation preserves your files and settings, you shouldn't need to perform much

follow-up work after the installation, but it's still a good idea to visit Microsoft's Windows Update site (windowsupdate.microsoft.com) to check for any high-priority updates. Also, you should install the most current manufacturer-supplied drivers for your hardware devices.

Carry Out A Clean Installation

To many users, reformatting a hard drive and reinstalling Windows sounds about as feasible as removing an engine from a car and rebuilding it. But believe it or not, the procedure is actually quite simple with WinXP

in case something goes wrong, a clean installation *absolutely* requires a backup because all of your data will be lost during the process. This fact is tied to the effectiveness of the method, because along with all of your important data, all extraneous data that's clogging up your hard drive and slowing down Windows will also be wiped away.

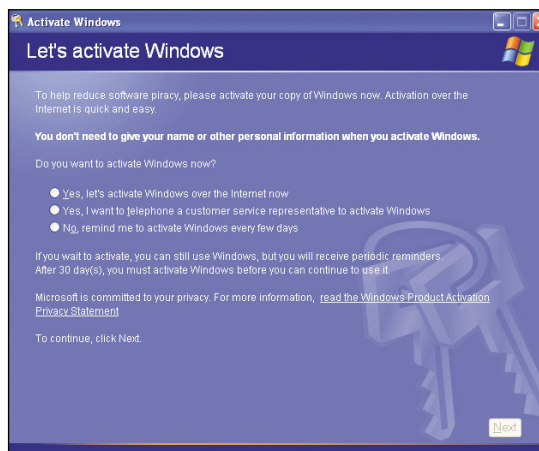
After thoroughly backing up your data, place your WinXP CD-ROM in your optical drive and restart your computer to boot directly from the installation disc. (See our directions in the Perform A Repair Installation section for details about booting from the CD-ROM.) Next, wait for the Welcome To Setup screen to appear and then press ENTER to set up WinXP.

On the next screen, press F8 after reading the license agreement; and then on the following screen, select the C: partition (or the partition or drive where WinXP is currently installed), and press D to delete the partition. Press ENTER to confirm the partition deletion, and confirm it again on the next screen by pressing L. Select the newly unpartitioned space and press ENTER.

Now you'll need to choose a file system for formatting the drive on the following screen; we recommend using NTFS (NT File System), as it offers

more advanced security and compression features. Select a full formatting option (not Quick), such as Format The Partition Using The NTFS File System, and press ENTER.

WinXP will then format your hard drive, copy files to the drive for installation, and begin the installation process. Once again, when your computer restarts, *don't* press any keys if you see the "Press Any Key To Boot From CD" message. Windows will officially begin the installation process at this point, prompting you for specific information. The first window

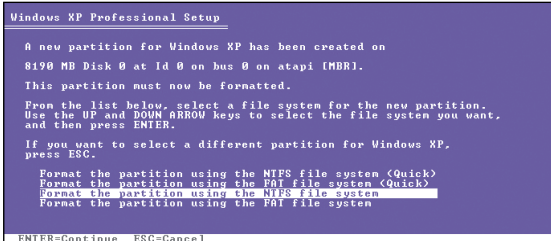


If you perform a clean installation, you will need to reactivate Windows. If you run into problems using the Internet option, choose the second option to activate Windows over the telephone.

because it'll walk you through each and every step and describe what it's doing along the way. Known as a clean installation, this procedure is by far the most effective way to return your computer to the performance levels you enjoyed when it was brand new.

Before you begin a clean installation, be aware that this method wipes out all of your data, including both your existing Windows installation *and* every file in all non-Windows folders on your hard drive. Although we recommend backing up your data before the repair installation method

that requires your input is Personalize Your Software, where you must enter your name and (if you choose) your organization. Click Next, and then type your computer name, type your



When performing a clean installation, you'll need to reformat your hard drive using the Setup utility. Choose NTFS (NT File System) for better compression and security features.

administrator password, type the password to confirm it, and click Next.

In the Date And Time Settings window, select the correct date, time, and time zone, and then click Next. The installation process will continue until the Networking Settings window appears. Click Typical Settings, click Next, and then follow the on-screen instructions for the workgroup and domain configuration. Click Next.

Now you can sit back and relax because Windows will continue the installation process on its own until it finalizes the process and reboots your computer. And one last time, we must tell you: *Don't* press any keys if you see the "Press Any Key To Boot From CD" message.

As WinXP restarts, a Display Settings dialog box will appear, informing you that Windows will automatically adjust your screen resolution. Click OK, and if you can read the following dialog box, click OK to continue. Finally, WinXP will display a Welcome Wizard that prompts you to specify user information, followed by the standard Welcome screen and the Windows Desktop.

After the Setup program finishes its end of the installation, you'll still need to follow through in a few areas to make sure everything is installed and working correctly. WinXP can recognize and

automatically install the drivers for most hardware devices, but it won't always announce that problems are present. Open the System dialog box from the Control Panel, choose the Hardware tab, and click Device Manager. Scroll down the list of devices and look for any question mark or exclamation point icons. These indicate problems with devices, and you can usually remedy the problems by manually installing drivers for them.

For components such as video cards and sound cards, it's a good idea to update these devices with the latest drivers from the manufacturers' Web sites, even if WinXP installs its own drivers. The manufacturers generally supply newer drivers than those Microsoft provides, and using manufacturers' recent drivers can help you avoid problems with the latest software.

You'll also need to configure your network and/or Internet connection using the settings you previously

wrote down. As soon as you're online, go immediately to the Windows Update site to download and install all high-priority updates.

Finally, install all of your software using the list you created before you started the clean installation process, making sure to install security software (such as antivirus and firewall applications) first.

Save Your Tips

Whether you perform a repair installation or a clean installation, it's a good idea to write down any tips you discover along the way. Because almost every computer contains different hardware and software, no two installations are ever the same, which means that you're likely to encounter steps or potential snags that are specific to your computer and its configuration. Then, the next time you reinstall Windows, just keep these tips handy to help ensure a smooth trip. ■

BY CHRISTIAN PERRY

How To Reactivate Windows

After performing a clean Windows installation, you'll have to reactivate the OS (operating system) with Microsoft after you finish the process. Unless you're also upgrading hardware devices when you reinstall Windows, you should be able to reactivate Windows using your Internet connection.

A notification will appear in your System Tray after the reinstallation process, reminding you to activate the OS.

Once you configure your Internet connection and download and install all high-priority updates, double-click the update reminder icon (or click Start, All Programs, Accessories, System Tools, and Activate Windows) and choose Yes, Let's Activate Windows Over The Internet Now. Click Next and then click No, I Don't Want To Register Now; Let's Just Activate Windows. When you click Next again, the wizard should

establish a connection and process the activation request. After the You Have Successfully Activated Your Copy Of Windows message appears, click OK.

If your Internet connection isn't active or if Windows is unable to activate it using the Internet, return to the first Windows Activation screen and click Yes, I Want To Telephone A Customer Service Representative To Activate Windows Now. Then, click Next and follow the directions for activating Windows over the phone. ■



Murphy's Law *Strikes*

Saving A Windows Reinstall
When Things Go Wrong

Murphy's Law says that if anything can go wrong, it will. Computer users know this all too well. What they may not know is that even when it seems like everything has gone wrong, the situation may yet get worse.

Such is the case when users encounter problems while reinstalling Windows. This tactic is commonly viewed as a last-ditch effort that desperate users attempt only when all hope is lost. Nevertheless, the actual nadir of PC ownership may come later when users encounter an installation that is beset with errors. Getting past such problems is the first step toward proving that sometimes things go right, regardless of what Murphy has to say.

Repair A Repair

Repairing a Windows XP installation is easier than reformatting the hard drive and starting over, right? Not if you run into one of these problems.

Problem. While performing a WinXP repair installation, you receive a BSOD (Blue Screen Of Death) error with the following message: "A problem has been detected and Windows has been shut down to prevent damage to your computer.

`PROCESS1_INITIALIZATION_FAILED`. If this is the first time you've seen this Stop error screen, restart your computer. If this screen appears again, follow these steps: Check to make sure any new hardware or software is properly installed. If this is a new installation, ask your hardware or software manufacturer for any Windows updates you might need. If problems continue, disable or remove any newly installed hardware or software. Disable BIOS memory options such as caching or shadowing. If you need to use Safe Mode to remove or disable components, restart your computer, press F8 to select Advanced Startup Options, and then select Safe Mode. Technical information: STOP: 0x0000006B (0x0000003A, 0x00000002, 0x00000000, 0x00000000)."

The message then reappears even after rebooting your PC, following the instructions contained in the error message, and relaunching the Repair tool.

Solution. The WinXP Repair tool may conflict with other applications running on your PC. In this case, the conflict involves the Roxio GoBack system recovery utility, which, before

Symantec purchased it, existed as a standalone Roxio program. You can bypass this error simply by disabling the offending program.

To do so, reboot the computer and press the Spacebar key when the following message appears on-screen: "Press SPACEBAR to repair problems or see other boot options." After you do so, the GoBack Boot menu will appear on-screen. Select the Disable GoBack option and click Continue. Click Yes to verify your action. Continue with the rest of the boot routine as usual.

Problem. During the repair process, you receive the following error message: "Unregmp2.exe. Entry Point Not Found. The procedure entry point getIUMS could not be located in the dynamic link library Msdart.dll."

The message also reappears each time you click OK to close it.

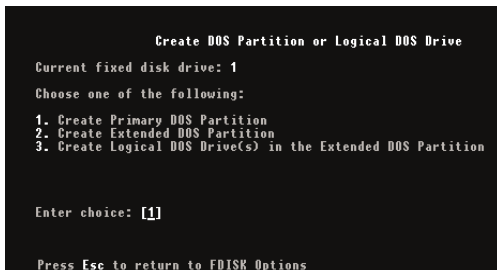
Solution. The latest version of WMP (Windows Media Player) is responsible for this particular error message. The conflict occurs when the Setup utility tries to replace WMP10 with the earlier version that comes bundled with your copy of WinXP. The only way to get around this issue

```
C:\>format c: /s_
```

By adding the /s switch to the FORMAT command, you ensure that DOS copies the key system files to the hard drive during the formatting process.

is to open the Task Manager and terminate the conflict manually so that the repair can continue.

You can access Task Manager during the Windows Setup by pressing the SHIFT-F10 key combination, typing `taskmgr.exe` at the command prompt in the resulting window, and



Before installing Windows 98 or Windows Me on a large hard drive, use the FDISK utility to divide the drive into multiple partitions. Follow FDISK's on-screen instructions to create partitions with minimal effort.

pressing ENTER. When the Task Manager appears on-screen, choose the Applications tab, highlight the task that corresponds to the error message, and click the End Task button. Next, choose the Processes tab, select `Unregmp2.exe` in the list, and click the End Process button. Finally, close the Task Manager dialog box and the Command Prompt window to return to Windows Setup. The rest of the repair should proceed as expected.

Problem. You performed a repair WinXP installation and now some or all of your program settings, Windows updates, and data files are missing.

Solution. Unfortunately, there may not be an easy way to handle this problem. A repair installation will keep most of your system intact, but you will lose some settings—the System Restore points, for instance—by design.

You also may lose other settings and even some data files if the repair process runs into proprietary files that the computer manufacturer loaded on your PC during its production. And then there's human error. Desperate users who frantically rush through the repair process may press the wrong

key—ESC rather than *R* when prompted to specify the installation type, for instance—and inadvertently overwrite the entire hard drive. The only thing you can do is to restore the missing files and settings from your full system backup. You have one of those, right? If not, nobody can help you.

Reformat/Reinstall Problems

Before reformatting a hard drive and reinstalling Windows, we strongly encourage you to perform a full system backup. Failure to do so will result in the loss of all programs and data files currently stored on your hard drive. Don't say we didn't warn you.

Problem. After manually reformatting the hard drive so you can reinstall Windows 98 or Windows Me, you reboot the PC only to receive a "Nonsystem Disk" or "Disk Error" message.

Solution. You receive this error because the hard drive is devoid of data, meaning the files that instruct the BIOS (Basic Input/Output System) to load the OS (operating system) were deleted during the reformatting

process. Insert the Windows setup diskette in the floppy drive and reboot the PC. The diskette contains the key system files that enable you to launch the Windows installation.

Or you can bypass this error by adding the `/s` switch to the `FORMAT` command (type `format c: /s`) when you format the drive. The `/s` switch instructs DOS to add several key system files, including `Msdos.sys` and `Command.com`, to the hard drive when the format is complete.

Problem. FDISK prevents you from creating partitions larger than 2GB.

Solution. As part of the partitioning process, FDISK asks if you want to activate large disk support. Pressing *N* in response directs FDISK to cap the partition size at 2GB.

To change this, run FDISK again, but this time press *Y* when prompted to activate large disk support. (*NOTE: The 2GB limit isn't the only restriction placed on partition size. See our "Put Partitions In Perspective" sidebar for more details about partition limitations.*)

Problem. You want to reformat your hard drive before reinstalling WinXP. But after booting with WinXP's MS-DOS Startup Disk and typing `format c:`, you receive an error

Put Partitions In Perspective

Maximum partition size varies depending on the OS (operating system; such as Windows 98, Windows Me, or Windows XP) and the file system (FAT16 [16-bit file allocation table], FAT32, and NTFS [NT File System]). Keep the following practical limits in mind when formatting and partitioning your hard drive.

OS	File System	Maximum Partition Size
Win98 & WinMe	FAT16	2GB
WinXP	FAT16	4GB
Win98	FAT32	127.5GB
WinMe	FAT32	2TB
WinXP	FAT32	32GB
WinXP	NTFS	16TB



message stating that FORMAT is a bad command or file name.

Solution. WinXP's MS-DOS Startup Disk doesn't include Format.exe, which explains why this error message appears when you use the command. This isn't a big deal, though, because WinXP's installation CD-ROM functions as a bootable disc. Plus, WinXP Setup lets you format and partition your hard drives during the WinXP installation routine. So skip the diskette and use the disc instead.

Problem. Your computer won't boot to the Windows installation disc.

Solution. Assuming the optical drive has power and is functioning properly, the problem most likely lies with the boot priority settings in the BIOS. To fix them, shut down the PC and restart it. As soon as it starts again, press the key (such as DELETE, F1, or F2) that'll access the BIOS Setup utility. Refer to on-screen instructions or consult your users manual for detailed instructions about accessing the BIOS.

When the BIOS Setup utility displays, peruse its options to locate the boot priority setting. Follow the on-screen instructions to reconfigure this setting, so the BIOS looks to the optical drive as its first boot option. Save your changes and exit the BIOS Setup utility. Insert the Windows installation CD-ROM in its drive and reboot the PC. Windows Setup should display.

Problem. You tried to reinstall WinXP, but the process was riddled with error messages. First, you received a "Setup was unable to perform the selected operation" error message when formatting the drive. Then, you received a "Setup has performed additional maintenance on your hard disk, press F3 to restart" error message, followed by an "An error has been encountered that prevents setup from continuing. One of the components that Windows needs to continue setup could not be installed. Data error

'cyclic redundancy check'" message. If you restart the process, you receive the same three error messages again.

Solution. Odds are good you have a malfunctioning hard drive. But before replacing it, we recommend trying a few tactics to see if you can resolve the issue. First, let Windows Setup try to repair the drive. Restart the PC as instructed by the error messages and give Windows Setup three or four chances to fix the problem, as it may need this many attempts to fix it completely.

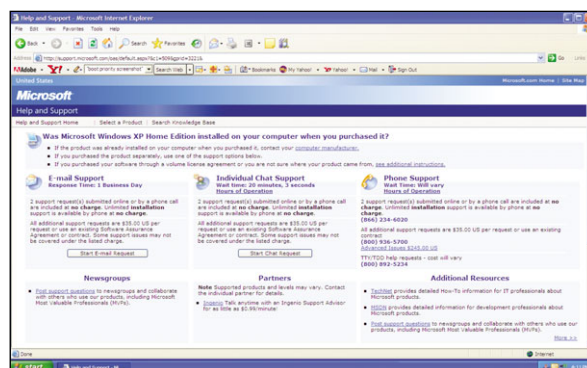
If that doesn't work, let Recovery Console tackle the problem. Start the PC, and when the Welcome To Setup screen appears, press the R key to activate the Recovery Console. Follow the

Problem. While reinstalling Windows, you receive an error message indicating that Windows Setup cannot copy some files to the hard drive.

Solution. The first thing you should do is remove the Windows installation disc and clean it with a soft cloth. (Wipe across the disc in a straight line and not in circles.) Reinsert the disc in the drive and try again. If that doesn't work, borrow a Windows installation disc from a friend and try it again. A successful installation with this borrowed disc indicates that your own disc is damaged, so request a replacement from Microsoft's Product Support Services. Visit support.microsoft.com/selectassist to find out which options are available—and how much they cost—for your version.

If you're unable to obtain a replacement, you'll have to purchase a new copy of Windows. Remove the borrowed disc from your PC (because keeping it is an act of software piracy) and resume the installation with your own disc.

On the other hand, if you're unable to install Windows from a borrowed disc, you probably have a malfunctioning hardware component on your hands. Consider replacing the optical drive, memory modules, or hard drive (in that order).



If you damage or lose your Windows installation disc, you may be able to obtain a replacement by visiting Microsoft's Online Assisted Support Options pages. Simply follow the on-screen links to access a phone number and email address, but keep in mind you may have to pay a fee for the help and/or the disc.

on-screen instructions to select the troublesome partition (if your PC is equipped with several of them) and enter the Administrator password (or leave it blank if you don't have one). When the command prompt appears, type `chkdsk /r` and press ENTER. Follow the remaining on-screen instructions to complete the installation and restart the PC.

The last resort is to replace the drive. But first, contact the manufacturer for assistance if your PC is under warranty. If not, see "Hardware Installation" at www.smartcomputing.com/rsdec03/hardware for detailed instructions.

Action & Reaction

You can't predict when Murphy's Law will strike, but it will strike eventually. Although you can't prevent some of the things that can go wrong, you certainly can prevent them from getting out of hand by the way you react. So, be patient, work methodically toward a solution, and remember that you're not alone in wishing this Murphy guy would just mind his own business. ■

BY JEFF DODD

DO IT YOURSELF

It can be difficult to know where to start when dealing with computers and technology and the problems that sometimes accompany them. For example, perhaps your computer is making a loud whining or grinding noise and you can't pinpoint the source of the problem. Or maybe your printer is on the fritz: Instead of printing a crisp, clear picture, you now have nothing but ink blobs on photo paper.

Troubleshoot your way through all of your computing-related problems with SmartComputing.com's Basic Troubleshooting Articles. This comprehensive list of articles is made up of topics ranging from operating systems and software to security and spyware. Each article starts at square one and quickly helps you through all fundamental checks and tests. Find the entire list of articles in the Tech Support Center at SmartComputing.com today!

Subscribers, be sure to log in and add these helpful articles (and other articles from the *Smart Computing* Web site) to your Personal Library. It's a great way to keep all of your information in one convenient location. Remember that you can't only store these articles, but you can also customize the folders you put them in for easy access later on.

How To Find "Get Rid Of" Articles

- 1 Go to SmartComputing.com and click the Tech Support Center link on the home page

We're your one-stop shop for computer problem-solving.

If you still can't find an answer to your question or problem after using our Tech Support Center, call us up and we'll help you through the problem.

Visit our [Tech Support Center](#)

- 2 Click the Basic Troubleshooting Articles link.

Tech Support Center

Error Messages

Solutions Knowledgebase

Basic Troubleshooting Articles

Security & Privacy

- 3 Search articles by category to find the answers you need. Subscribers, be sure to log in so you can add the articles to your Personal Library!

Basic Troubleshooting

Troubleshooting
September 2004 • Vol 15 Issue 9

WEB ONLY
Basic Troubleshooting
Windows XP

Windows XP is undoubtedly the most robust and stable operating system Microsoft has released, but that doesn't mean it is perfect. Like any complex piece of software, it has its share of hiccups: conflicts, software errors, and crashing problems. Fortunately, it takes only a few troubleshooting techniques to solve the majority of problems that are most likely to crop up when using Windows XP.

First Things First. Patches and drivers are the first things all computer users should become familiar with, as they solve the majority of software and hardware problems. Patches are used to upgrade software to a newer version, fixing bugs, enhancing compatibility, and sometimes even adding new features in the process. Many times when software starts acting up or refuses to work with a particular piece of hardware, upgrading the software using the most recent patch available at the manufacturer's Web site solves the problem.

Drivers are programs that let hardware communicate with Windows and the other applications installed on the PC. Upgrading a hardware driver is much like applying a software patch; its driver-releases always strive to fix compatibility problems, make the hardware work more efficiently, and add new features with each release. Check frequently for new patches and drivers for all your major applications and hardware.

www.smartcomputing.com The ultimate computing resource.



PC Project :

Movin' On Up

Transfer Data & Programs To A New PC

A new computer might not be as exciting as a new home, but it still involves some preparation, moving, and settling in. Thankfully, as with household moves, a variety of resources, including professional assistance, can make the job easier. We'll help ensure a successful move from your data's old home to its new digs. And, no, you can't use our truck to move that old recliner.

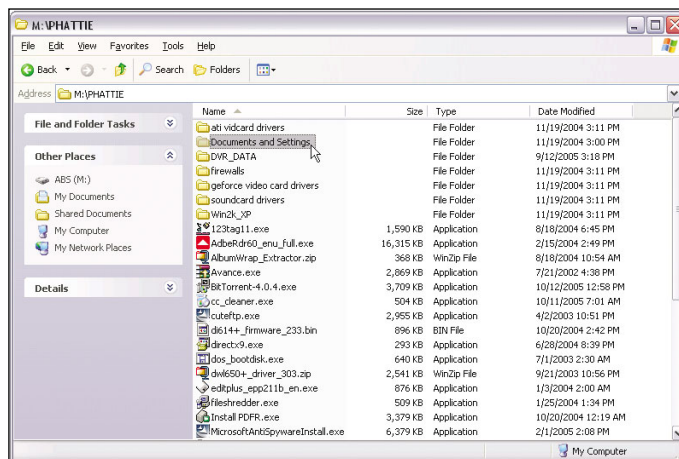
As with any other move, the scope and tools for a computer migration depend on how much stuff you have, how much you want to move, and how similar or different you want the new place to be. We'll walk through several (increasingly complex) scenarios, explaining options for each and providing step-by-step guidance along the way. We need to present two caveats first, though: We assume your new PC is running Windows XP. Certain applications and utilities

require it for the new, or target, machine. Secondly, we assume you've dedicated some time to the task. As with a new house, moving PCs can't be accomplished properly in just an hour or two.

Simple Data Transfer

The easiest and quickest method is simply to transfer data files from one hard drive's file system to another. It won't carry any Windows (or other

From a few simple steps to a long complicated process, moving from one PC to another can take several forms.



For moving data files alone, simply create a folder on a network drive or removable storage and copy everything there.



If you're transferring data from a non-Windows XP machine, insert your new computer's WinXP installation disc and select Transfer Files And Settings from the Perform Additional Tasks menu.

application) settings or any installed applications, but you'll get all your important files and start fresh in a new environment. This method is best if you aren't concerned with retaining Desktop appearance, mouse and display options, or Internet browsing configuration. If you just want the data and prefer to set up a new machine as a new machine, take this approach.

Start by determining which data to transfer. It sounds blindingly obvious, but just like that old college beer mug tucked away in the back of the closet, some things are easy to forget if you don't stop and think. My Documents and any files residing on the Windows Desktop are clear candidates. But don't forget email boxes, Internet favorites, or cookies. Review our "Packing Manifest" sidebar for a list of common folders and files to transfer, with their default locations on WinXP systems. If you have files you no longer use and don't need to keep, now's a good time to delete them or, better yet, back them up to a CD and store them out of the way. Add up the file and folder sizes, estimating the amount of space needed.

Next, using that size information and your available hardware, figure out how you'll carry the data from the old to new PC. If you're running a

home network and can get both machines online, copying across the LAN (local-area network)—sharing the target drive locations just during the transfer—is easiest. And you can move as much data as your new drive will hold.

Otherwise, copy the files and move them to their new home with an optical disc burner or removable storage (a USB keychain drive, external hard drive, or floppy diskette). Keep in mind that standard DVDs top out around 4.5GB, few keychain drives hold over 1GB, and CDs only hold about 750MB.

If you have too much data to fit on these media and don't want to shuttle

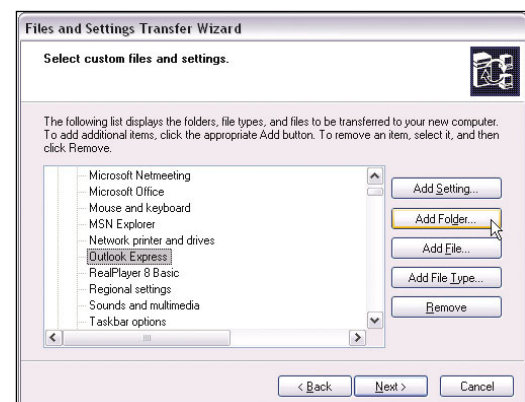
back and forth all day, consider removing the hard drive from your old machine, installing it as a secondary drive on the new system, and copying files internally to the new computer's primary drive. This method will provide the fastest transfer speeds, but the time investment of opening the cases and moving the physical drive only pays off with very large quantities of data. When you're done, either return the drive to its original PC or reformat it in the new system as additional storage.

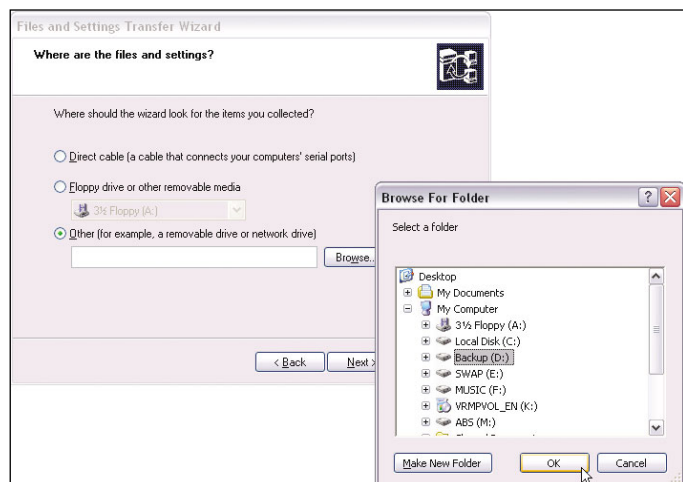
Data & Settings Transfer

Many users, however, have a variety of settings (in Windows and other programs) that they'd like to transfer. These options include Desktop backgrounds, cursors and mouse pointers, Internet security settings, fonts, and program preferences (including Office, Outlook, and Photoshop). You invested lots of time and thought into getting everything situated just how you want it—why should you have to start all over just because you got a faster processor and a bigger hard drive?

This method won't transfer applications. Moving programs without reinstalling can be tricky and unreliable. There are programs to help you do it (read on if you're committed), but we don't recommend them unless you're moving between nearly identical

Use the menu to choose which files and settings the wizard transfers.





On the new machine, point the Files And Settings Transfer Wizard to the location of your saved data.

systems. Similarly, if you're upgrading an OS (and thus should reinstall all applications from their source discs or download files), use this method to retain Windows and program settings along with your personal data.

Files And Settings Transfer Wizard works on any source computer running Windows 95 or later, as long as you're moving to a WinXP system. On the original machine, select Old Computer on the wizard's second

or removable storage. Select the option appropriate to your method, browsing to the removable drive and/or folder you want to use.

Next, select data to transfer. For any option (Settings Only, Files Only, or Both Files And Settings), view the list on the right showing the default items to be moved. If you're happy with the list in its entirety, go ahead and select whichever you prefer and click Next. If, however, you want to add files, folders, or settings to the list (or want to remove some in order to save space), select the box for selecting a custom list before clicking Next.

When specifying transferred files or settings, click Add Settings, Folders, Files, File Types, or Remove to initiate the corresponding action with any item with the menu on the right. Click Next. Note any applications to install before running the wizard on the new machine (many programs need to be

... doing it yourself is the easiest option.

You can buy third-party applications that migrate data and settings from one system to another, but we'd recommend using the built-in Windows Files And Settings Transfer Wizard. First, you already have it. (The utility comes with WinXP.) Second, it's free. Third, it's easy to use and reliable. As with any migration utility, however, transferring can be time-consuming. And if you want control over which files and settings to move, you'll need to customize the wizard's default lists.

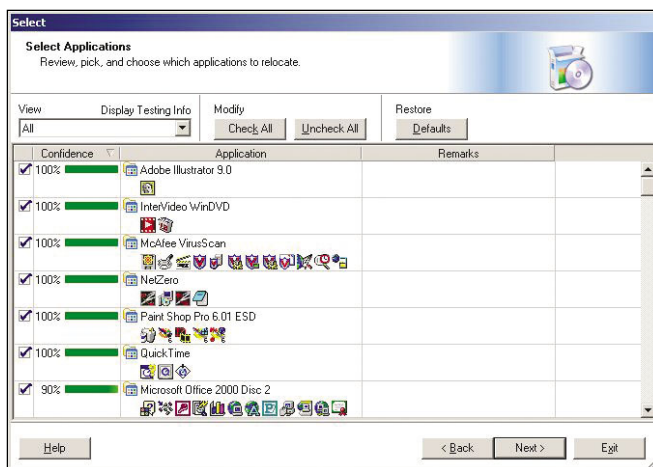
If your old computer is running WinXP, start the Files And Settings Transfer Wizard by opening the Start menu, selecting Accessories, and choosing it from the System Tools menu. If your old computer uses an earlier Windows OS, insert the WinXP installation disc and choose Perform Additional Tasks from the menu. Select Transfer Files And Settings to launch the wizard. The

screen. Then select a transfer method. Direct cable connections are slow, and many new machines don't have serial connections. We recommend using your home network (again, opening a shared location on the new system for receiving the transfer data)

installed before any settings can be saved), click Next again, and wait for the wizard to collect your data and save it to the specified location.

On the new machine, reinstall any applications for which you're transferring settings. Launch the wizard

Alohobob's PC Relocator can help you move complete applications, as well as their files and settings, to a new computer.



and select New Computer when prompted. Select the option indicating that you already collected your files, click Next, and browse for the location where the copied data resides. Let the wizard unpackage and copy the data, checking afterward to make sure everything transferred successfully. Close the wizard and reboot the system.

Data, Settings & Application Transfer

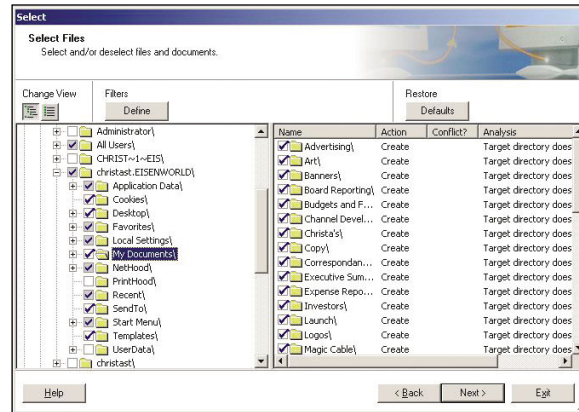
Transferring installed applications from one system to another takes powerful tools and requires nearly identical hardware profiles and operating systems. Even in those circumstances, the length, amount of data, and potential for error make such a process daunting. We don't recommend this approach unless you have a compelling reason that makes reinstalling applications on the new machine impractical or impossible.

Moving programs along with their associated files and settings requires specialized software utilities. Programs such as Norton's Ghost (\$69.99; www.symantec.com) or Alohabob PC Relocator (\$69.95; www.alohabob.com) are powerful tools that essentially create identical copies from one hard drive to another. The result will be an identical system—with the same good and bad elements.

Exact requirements and steps vary with each utility. In general, you'll need to back up all your data, run the program to create a system image, transfer that image file (via direct cable connection, a network, or removable media), and write the image to the new system with the application's tools. When taking this approach, never skip the backup step and thoroughly read all the instructions and documentation.

Moving Day

From a few simple steps to a long complicated process, moving from one PC to another can take several



Third-party utilities (such as PC Relocator) offer similar tools for migrating files and settings, in addition to complete applications.

forms. Whichever approach you take, you'll enjoy your new surroundings more if you take exactly what you need with minimum effort and expense. For simple systems or for users wanting a fresh start, doing it yourself is the easiest option. If you have a lot invested in your setup and a lot of data to carry, Windows' built-in tool

will carry the burden. If you're switching from one identical system to another and need to transfer all your programs, along with data and settings, you'll need to have pros help with the move. ■

BY GREGORY ANDERSON

Packing Manifest

Some things you'll never leave behind. Others need a little memory jog to make the list. Here are several files and folders you should carry to a new machine, as well as their default locations in Windows XP. ■

My Documents	Default location for storing personal files.	C:\DOCUMENTS AND SETTINGS\USERNAME\MY DOCUMENTS
My Music	Default download location for many services. Consider moving separately, as music files take up lots of space.	C:\DOCUMENTS AND SETTINGS\USERNAME\MY DOCUMENTS\MY MUSIC
Outlook.pst	Stores Outlook inbox, calendar, contacts, and other profiles information.	C:\DOCUMENTS AND SETTINGS\USERNAME\LOCAL SETTINGS\APPLICATION DATA\MICROSOFT\OUTLOOK
Cookies	Cookies store information about your Internet history, including saved site logins.	C:\DOCUMENTS AND SETTINGS\USERNAME\COOKIES
Favorites	If you spent lots of time collecting and organizing Internet Explorer Favorites, you won't want to start over.	C:\DOCUMENTS AND SETTINGS\USERNAME\FAVORITES
Windows Desktop	Most people store important files, folders, and shortcuts material on their Desktop. Don't leave them behind.	C:\DOCUMENTS AND SETTINGS\USERNAME\DESKTOP

Intuit Quicken Premier 2006

Quicken Questions? Here Are Some Answers

Beginner

Personal Finance

2006 for Win98/
Me/2000/XP

Quicken 2006 Premier provides many interesting and helpful new features for users looking to take control of their personal finances. But taking advantage of those features requires a fully functioning copy of the software. Error messages and serious problems with the latest version of Quicken are rare, but they do occur. When trying to fix such problems, you have several options, ranging from using Quicken's Web site to the help feature in Quicken itself.

Common Problems

Here are some common problems you might encounter in Quicken 2006 Premier.

Cannot restore file/Error 1305. This error message most commonly occurs when you're opening a Quicken data file from a CD-R (CD-recordable) or CD-RW (CD-rewriteable). To fix the problem,

copy the file from the CD to the Quicken folder on the hard drive. Right-click the file and select Properties. Place a check mark next to Archive and remove the check mark from Read Only. Click OK and then open the file from within Quicken.

Error recovery. If you see this message as part of your online session, it probably means your connection was interrupted during the last session. The best option is to wait until the next business day and try the connection again.

File conversion issues. If you're switching from Microsoft Money to Quicken, you first must download the Data Converter (web.intuit.com/support/quicken/dataconverter). Follow the instructions with the Data Converter. Although Quicken can read most of the information from your Money data file, it cannot convert the Memorized Transaction list, online account information, or any financial planning data.

Multiple versions. If you want to run more than one version of Quicken on your PC, you must install each Quicken version in a separate folder. When the first dialog box appears during installation, hold down the CTRL and SHIFT keys while clicking Next. This will cause the installer to skip checking for (and deleting) other versions of Quicken. Later, you must

change the name of the default installation folder to another name.

OL-297. This error occurs when trying to perform online financial tasks. It almost always involves a problem with the security of the online connection. If the error occurs intermittently, it's probably a temporary server problem. Otherwise, it could indicate a problem with your firewall settings.

Find Help

To use Quicken's built-in Help function, click the Help menu and Quicken Help. Click the Contents tab to see a list of topics. Click the Search tab to perform a keyword search on all of Quicken's help topics. Or you can click the I Want To text menu to jump to a common topic.

To obtain help specific to the area of Quicken you're currently using, just press the F1 key.

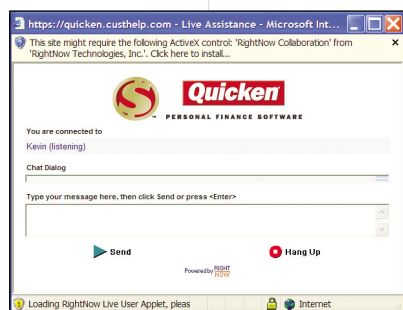
Quicken offers plenty of help through its Web site, as well. To see your options for obtaining help, visit www.quicken.com and click the Help & Support button. Select your product version to see your options. (These examples are for Quicken 2006 For Windows.)

Message boards. Click the User Forums link along the right side of the page. Through these message boards, you can find answers to common questions, look for previously posted answers to your particular problem, or post your own questions and wait for other Quicken users to help you. Just click the category and topic that interests you to see the postings.

Click Post New Topic to create a new topic or ask a question. You need to create a Quicken.com account to post or reply in the message boards. You'll need to provide your name and email address. Then create a username and password.

Live Help. Click this tab to join an online chat session where you can ask a one-on-one question of a support tech. The tech will try to answer your question immediately within the chat session or later via email.

Telephone support. Click this link along the right side of the window to find the toll-free support number along with a list of the types of problems for which you can call. ■■



Quicken's Live Help allows you to ask a support tech a question in a one-on-one live chat session.

BY KYLE SCHURMAN

Broderbund Print Shop 20 Deluxe

Use Frames For A Formal Or Playful Effect

Desktop
Publishing

Beginner

20 for Windows
98/Me/2000/XP

Print Shop 20 Deluxe provides thousands of graphics for you to use in projects, as well as many ways to modify or add to them. One of those ways is to attach a frame to a graphic.

Frames included with Print Shop vary from simple, resembling traditional ones you might use for a photograph, to those which provide graphic elements of their own, thereby augmenting the graphic.

Create a new project of any kind by clicking File and New. Click Art & Photos and Insert Art & Photos. Click a graphic to select it and then click Select to place it in your project on the Design Desk. Close the Art Gallery. Make sure the graphic is selected—it will have handles on it if it is. Click Effects (the menu bar selection at the top of the Print Shop window, not the selection in the Object Bar to the left) and Apply Frame. The Apply Frame dialog box appears.



This antique gold frame nicely complements the flower graphic

Plain & Pretty Available

There are two tabs, one for Picture Frames and one for Box Frames. Click Picture Frames.

A list of the available frames appears on the left, while thumbnails appear on the right. Click the Collections box to choose from All or Picture Frames. Both these actually display the same thumbnail frames. There are about 50 of them, including some resembling wood and metal.

Click the name for one of the frames in the Frame Types box, and that frame will be highlighted. Click OK to apply the frame to the graphic and return to the Design Desk. You can select the graphic and move or resize it, and the frame will move with it.

Follow the same process for Box Frames. Click the Box Frames tab. Here you are presented with nine types of plain boxes for framing the graphic. Click one and then click OK; the frame is applied to the graphic.

Delete a picture or box frame by selecting it on the Design Desk and clicking Effects and Apply Frame. Click Remove Frame and OK. You are taken back to the Design Desk where the graphic now appears by itself.

This method is best if you can find a frame that meets your needs in the Apply Frame window reached by clicking Effects and Apply Frame. There's a trick you can use, however, if you don't find a frame there you like.

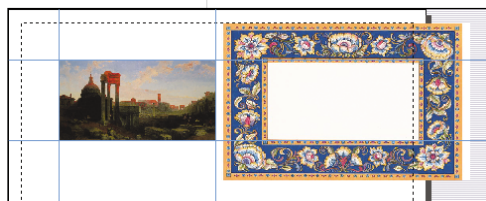
Combine Frame & Graphic

Click Art & Photos and Insert Art & Photos to bring up the Art Gallery. Make sure All is selected in these areas: Select Featured Art And Photos, Select Type Of Graphic, and Choose Category For Graphic. You can refine the search later if you like. Type **frame** in the box at the bottom of the search area. Click Go. Dozens of frames and frame sections appear in the thumbnail list on the right side of the window.

Some frames are wider than tall—some vice versa. Keep in mind which type will fit your graphic best. You can stretch the frame to fit, but it may get out of proportion and look odd. Click the frame you want and click Select. The frame appears on the Design Desk, but how do we get the graphic and frame to work together? Rulers come to our rescue.

Drag the graphic to the upper left of the Design Desk. Click the top ruler and drag the slider to the right. A blue line will appear. Place it along the right edge of the graphic. Repeat the process but place the line along the left edge of the graphic. Now click the side ruler and drag down. Place the blue line along the bottom edge of the graphic. Repeat for the top edge. You have now defined the boundaries of the graphic.

Drag and position the frame so that the framed space lines up with the rulers. Do this to create a framed space that both horizontally and vertically matches the graphic. Drag the graphic or frame to fit the two together. Use your keyboard's arrow keys to make adjustments. Click and drag the slider to select both graphic and frame. Click Arrange and Group. Now you can resize or drag the graphic-frame combination, and they will move together. ■



Use rulers to match up graphics with frames and then group them, so they can be treated as a single object.

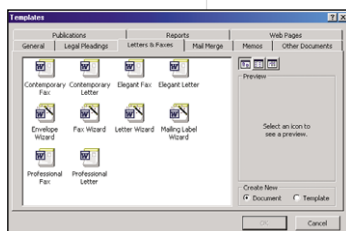
BY TOM HANCOCK

Microsoft Word 2002

Use Templates To Streamline Work, Part I

Word Processing

Intermediate

2002 for
Win9x/Me/NT
4.0/2000/XP

The Letters & Faxes tab contains several types of letters and faxes, as well as wizards for creating your own.

Templates are an invaluable resource in Microsoft Word 2002 when you want to create several documents that have the same source text, formatting, and graphics. There are more than 40 templates available in Word, as well as additional ones at Microsoft's site (www.microsoft.com).

If you need a jumpstart when creating, for example, letters, reports, or Web pages, templates can give you a nudge in the right direction. Templates not only automatically place information within documents, but they also let you create custom editing environments for a specific audience.

You can use templates to create a system of styles that make documents consistent. You can also create a template that contains boilerplate text if you often send documents, for example, to business clients who have contract clauses or specific marketing language.

It's Only Normal

Even if you don't realize it, you already use a Word template. Word automatically looks for the Normal template, named Normal.dot in Word's template folder, every time you create a new document. The Normal template doesn't contain text or graphics, but does have AutoText entries, accessible by clicking Insert and AutoText. Styles—click the Styles And Formatting button on the Formatting toolbar—are also available.

The Normal.dot template is continually updated with new styles, AutoText entries, macros, and other new items as you create them, unless you designate them to be stored elsewhere. The more you work with documents based on the Normal template, the more important the template becomes.

Word will automatically create a new Normal.dot template if it is missing from the template folder or if it has become corrupted. This new template, however, will contain only the default elements for Normal.dot.

Make Use Of The Library

By default, Word uses the Normal template, but depending on your project, there are many

more to choose from. These other templates are available by clicking File, New, and the General Templates option in the New Document pane. This brings up the Templates dialog box.

Click the Reports tab, the Elegant Report icon, and OK. You may be prompted to insert your Microsoft Office XP disc. A new document appears with, for example, dummy titles, headlines, a table, and instructions on how to use the template. From here, enter your own text and other elements. Save the new document as you normally would.

Some of the templates you will see while using the Templates dialog box are not templates, but wizards for creating a new document. The wizards have a distinctive look. Under the Letters & Faxes tab, for example, are wizards for creating an Envelope, Letter, Fax, and Mailing Label. Click a wizard icon and OK.

The Office Assistant may appear, asking questions for how you want to proceed. The wizard then will lead you through creating a project.

Browse Additional Templates

Many templates are included with Microsoft Word, but there are even more available from the Microsoft Web site. Open the New Document pane and click Templates On Microsoft.com. Your browser will open to a site that contains the templates. Browse the template categories below to find templates on particular topics.

Click one of the topics to bring up a list of templates, which have been ranked by users with one through five stars. Templates are available for Microsoft applications other than Word, and these are noted. The version of Word that will support the template is also listed.

Click the title of the template to open a Web page that shows a preview of the template. When you find one you like, click the Download Now button. An End-User License Agreement may appear. Read it and then click Accept. Click Save and place the template in the directory C:\DOCUMENTS AND SETTINGS\USERPROFILE\APPLICATION DATA\MICROSOFT\TEMPLATES. The new template will appear when you look in the Templates window and click the General tab. ■



Microsoft Office Online contains many resources for the Word user, including templates organized by theme.

BY TOM HANCOCK

Corel WordPerfect 11

Abbreviate & Expand With QuickWords

Office Suites

Intermediate

Win9x/Me/
2000/XP

Although WordPerfect can't write prose, it can help you fill the page. Its QuickWords feature is designed to automatically expand abbreviations into full words or phrases.

Expand Abbreviations

A QuickWord is an abbreviation you designate for a regularly typed word or phrase. Once you set up a QuickWord, the program replaces it with the entire word or phrase every time you type your designated shortcut. Imagine you're working on a large proposal where you must continually type the name of your company, Widgets R Us. Using QuickWords, you can assign the abbreviation WRU to represent the phrase "Widgets R Us."

To add a word or phrase to the QuickWords list, select the word or phrase in the document. From the Tools menu, choose QuickWords. The QuickCorrect dialog box appears with the QuickWords tab on top. In the Abbreviated Form box, enter the abbreviation you want to represent the selected word or phrase. Choose the abbreviation with some care; steer clear of common words, abbreviations, or acronyms. If you must use an existing word as your QuickWord, add a character, such as a punctuation mark, to differentiate it from the everyday usage. For example, rather than use "we," try "we*" to prevent annoying, unwanted substitutions. Once you've settled on an abbreviation, click Add Entry.

QuickWords can also be used to represent entire sentences or paragraphs of text. Just select the entire text you want represented and follow the same steps. This is particularly useful with boilerplate language, mission statements, and other canned text.

Make Changes

None of the abbreviations are set in stone, however. It's easy to go back and change the designations you've made. Perhaps your company has decided to drop cutesy and adopt better spelling to become We Are Widgets. You're used to entering "WRE," so you just want to change the expanded version of the QuickWord. Select the new company

name in your document. Return to the Tools menu and again choose QuickWords. Locate WRE in the Abbreviated Form list and click it. Now click Options and Replace Entry. When a box appears asking Replace QuickWord With New Selection?, click Yes.

If you decide you want a different abbreviation to coordinate with the new company name, you can do that, too. Open the QuickCorrect dialog box to the QuickWords tab. Choose the QuickWord you wish to change, click Options, and select Rename Entry. In the Rename QuickWord dialog box, enter the new abbreviation and click OK.

Should you leave the company and want to banish all references to it, just delete the QuickWord from the same QuickWords tab. Select the abbreviation and click Delete Entry.

Set Preferences

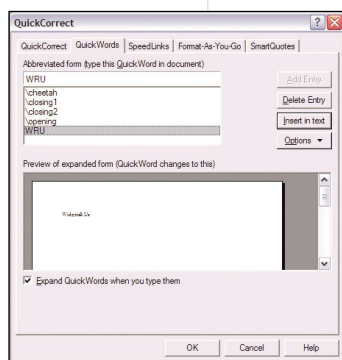
The default setting expands QuickWords as you type, but you can instruct WordPerfect to wait until you've finished typing. Return to the Tools menu and again click QuickWords. At the bottom of the QuickWords tab is a checkbox labeled Expand QuickWords When You Type Them. Deselect the box. Press CTRL-SHIFT-A when you want to expand the abbreviations.

You may also choose to have the abbreviations expanded as plain text, although the default setting uses the formatting in place when you created the QuickWord. If you created the QuickWord for Widgets R Us by selecting text that was bolded and italicized, for instance, that formatting is preserved and applied when "wru" is expanded in new locations. To apply plain text rules to the expansions, return to the QuickWords tab. Click Options and Expand As Plain Text.

Quick Graphics

In the interest of accuracy, QuickWords should really be called QuickWords and Pictures—you can use QuickWords to insert graphics into your document, as well: Select the graphic in the document. Click Tools and then QuickWords. Enter the abbreviation you want to represent the graphic and then click Add Entry. ■

BY ANNE STEYER PHELPS



Set abbreviations to represent words, phrases, paragraphs, or graphics.

Jasc Paint Shop Pro 8

Intro To Scripts

Image Processing

Intermediate

8 for Win98SE/
Me/NT 4.0/
2000/XP

(NOTE: Corel acquired Jasc Software, so the most recent version, Paint Shop Pro 9, may list Corel as the developer.)

You have a new batch of photos on your PC and want to post the best ones to your Web site, but they're all upside down, have poor color contrast, and need some type of border to look more decorative. Sure, you could fix each one individually using multiple steps, but there's an easier way to accomplish all of this. Paint Shop Pro includes an efficient form of automation: scripting.

A **script** (also known as a macro) is a sequence of commands combined into one step so that your PC performs them all at once whenever you click an assigned button.

Set The Scene

Launch Paint Shop Pro, open the View menu, choose Toolbars, and select Script. This toolbar contains all the script-related commands, including Run Selected Script, Edit Selected Script, and Start Script Recording. Open the Script Output box by going to the View menu, choosing Palettes, and selecting Script Output. Here, you can watch commands execute as you run a script, as well as see error messages and other information.

The quickest way to become familiar with scripts is to run one of the preset scripts. Open a photo, look at the left end of the Script toolbar, and select one of Paint Shop Pro's scripts—such as Art, Black And White Pencil, and Watercolor—from the drop-down menu. After you select one (we chose Dot Method), click the Run

Selected Script button (which looks like a "play" button). In the Script Output box, you'll see the various components of the script run, and you'll be able to see the changes in the image as the software applies each step to the photo. In a few seconds, our colorful photo became a captivating sketch.

Write The Script

OK, that was kind of neat, but it still doesn't solve our original set of problems. So, save a copy of this photo if you wish, and then open one of the upside-down, miscolored, and plain-edged photos we described earlier. We're going to create our own script that will fix all these problems in one step.

In general, to record a script, you need to click a button to start the recording process; you perform the desired actions within the script; you stop the recording; and then you save the script. Advanced users will likely want to try writing their own scripts in Python, but if you don't know this scripting language, you can still create your own scripts by following the method we describe in this article.

The first step is to write down the tasks you want this script to perform. In our example, these tasks are: 1) rotating the photo, 2) fixing the color, and 3) adding a border. The second step is to start the recording and then perform each task. The third step is to stop the recording and save the script so that you can use it on the other photos in this batch.

In the Script toolbar, click the Start Script Recording button (a small circle icon). Open the Image menu, choose Rotate, and select Rotate Clockwise 90 (or the appropriate rotation). Next, you could open the Adjust menu and select one of the automatic color tools, such as Automatic Contrast Enhancement, but we're going to take a twist here and use a script within a script. In the Script toolbar's drop-down menu, we select OneStepPhotoFix and click Run Script.

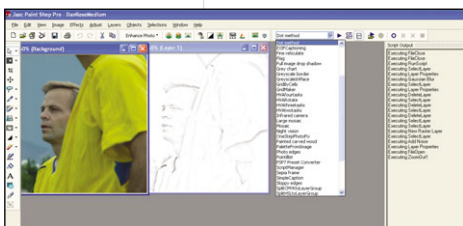
When that script finishes, run one of the photo edge-related scripts. (Remember, we're still recording all this in one script.) From the drop-down menu, select Sepia Frame, click Run Script, and in the various dialog boxes, select OK four times to accept the default values.

Finally, return to the Script toolbar, click the Save Script Recording button, give the script a name that will remind you of what the script does, and click Save.

Fade To Black

And that's all there is to it. You can now run your script on each photo. Simply open a photo, choose your script from the drop-down menu, and click Run Selected Script. That way, instead of spending an hour or two performing three or more individual tasks on each photo, you can perform them all with just one click. ■

BY HEIDI V. ANDERSON



A script performs multiple steps with just a click of a button, including the process of transforming this photo into a dot image.

Microsoft Excel 2002

AutoFiltering

Spreadsheet

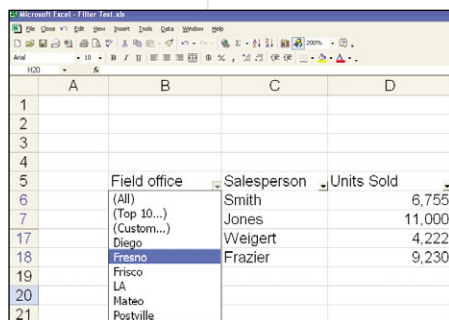
Advanced

2002 for
Win9x/NT
4.0/2000/XP

We generally think of filters as tools for keeping bad stuff out and letting good stuff pass through. While your Excel worksheets may not contain actual bad stuff, you could probably benefit at times from using Excel's filtering tools to strain out certain kinds of data.

A couple of things should be clarified up front. First, sorting and filtering are different. Excel's Sort function rearranges information in a list to reflect the requested order. The Filter function, on the other hand, temporarily hides list items that don't match your chosen filter criteria.

Second, you can work with two kinds of filters: AutoFilter and Advanced Filter. This article will stick to AutoFiltering, which is powerful enough to cover most common jobs. For more complex filtering, use Excel's Help feature to read up on Advanced Filter.



	A	B	C	D
1				
2				
3				
4				
5		Field office	Salesperson	Units Sold
6		(All)	Smith	6,755
7		(Top 10...)	Jones	11,000
8		(Custom...)	Weigert	4,222
9		Diego	Frazier	9,230
10		Fresno		
11		Prisco		
12		LA		
13		Mateo		
14		Postville		

Don't get distracted by irrelevant data. Cut lists down to a manageable size with an AutoFilter that hides everything that doesn't match your criteria.

Quickie AutoFiltering

To start a filtering job, click a cell in the list of information you're planning to filter. Then choose Data, Filter, and AutoFilter. Little down arrows will appear in each column heading in your list. Clicking an arrow reveals a pull-down menu with

some commonly used filtering options. When you click an option, the list is sorted by that criterion.

One filter option hides all but the top 10 values in the column you're sorting. If you're working with a list of sales results for 75 products, this could be very handy. When you choose Top 10, a dialog box appears and immediately reveals that this filtering option does a lot more than narrow the list down to the top 10. You can set the filter to pull out the top or bottom 10, to look for another number of values you specify, or filter by either the literal numbers or a percentage such as the top 5%.

You'll also see under the Down arrow that you can filter the list by each of the values represented in the list. This is useful if your list records hundreds of sales transactions, each of which is coded to one of your 20 regional offices. To see only transactions tied to the Fresno office, go to the column with the office names in it and choose Fresno from the AutoFilter list.

Custom AutoFilters

Choose the drop-down list's Custom option for more involved filtering setups that let you tailor the lists to your needs. Let's say you want to see only sales results that exceed 5,000 units. Choose the drop-down arrow for the Units column and click Custom. In the Custom AutoFilter dialog box, click the left drop-down list and choose Is Greater Than Or Equal To. Then type 5,000 in the box on the right.

Custom filters also work with text-based entries, such as company product names that start with XL for one product line and EZ for another line. Maybe you want to filter the list to show only the XL products, which have names such as XL1000 and XL5000. In the Custom AutoFilter dialog box, select Begins With in the left drop-down list. Type XL in the right drop-down list.

To really slice and dice your data, set up one filter on top of another. For example, say you want to see all the salespeople in the Fresno office who sold more than 1,000 widgets. First filter the Field Office column for Fresno. Now go to the Units Sold column and click the Down arrow. Choose Custom and set up a Greater Than Or Equal to filter as described above.

Rules Of Filtering

As you start using all this filtering power, remember some guidelines. Although you can apply multiple filters to one list, you can filter only one list at a time on any given worksheet. So if you want to filter both an inventory list and a sales results list, you'll need to place the lists on two worksheets.

Also, filtering hides entire rows of data that don't match the criteria. Anything in a row that's filtered out of the list disappears all the way across the spreadsheet. It's not gone for good, but it won't appear as long as the filter is on.

To remove a filter from a column, click the Down arrow and choose All. Everything in the list becomes visible again. To remove several filters at once, choose Data, Filter, and Show All. All the data in each column reappears. To eliminate the down arrows at the top of each column, choose Data and Filter. Deselect AutoFilter. ■

BY TREVOR MEERS

Microsoft PowerPoint 2002

Outline View

Presentation

Advanced

2002 for
Win9x/Me/NT
4.0/2000/XP

Style ranks right up there with substance when it comes to PowerPoint presentations. They have to look good if you hope to impress your audience. But even the flashiest presentation must have good ideas at the core, and that's sometimes easy to forget when you're designing sharp-looking slides.

That's where the Outline view can help keep you honest. This handy pane boils a fancy slide-show down to just its text, leaving your ideas nowhere to hide. The message (or lack thereof) is literally right there in black and white for you to analyze.

Find The Outline

When you're looking at slides in Normal view, the default setting is for one slide at a time to appear in the main window on the right side of the PowerPoint screen. On the left side is a smaller pane that has a couple of tabs at the top. One is Slides; the other is Outline. (If the tabs' labels don't appear, you can see them by resting the message pointer on the tabs.)

You probably use the Slides tab most of the times, relying on the thumbnail previews of the presentation's slides to see where everything stands and to quickly move to other slides. When you're working with the actual text on your slides rather than designing the slides' look, the Outline view provides a convenient alternative workspace. Here the text

You can write text into this area by clicking where you want to insert the new copy and typing.

With all of these adjustments, the changes you make in the outline immediately appear in the actual slide layout in the window to the right.

You also can format text in the outline section. Highlight the text you're changing and make a formatting adjustment, such as altering the point size or applying bold formatting to the words.

Want to work with all the text on a slide at once? In the Outline pane, point to the slide's icon; you'll see the pointer turn into a four-headed arrow. Click to highlight the entire slide's text. A similar trick works for selecting all the text in a specific outline item. When you move the arrow to the bullet point in front of the item, the arrow gains four heads, meaning you're ready to select the item.

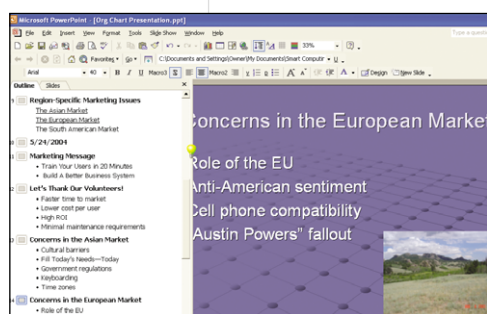
Outline Buttons

When you switch to Outline view, lineups of new buttons become available on the Standard and Formatting toolbars. On the Standard toolbar, the button lets you expand and collapse all of the outline's subsections at once. When you collapse everything, the outline lists only the words in the title box of each slide. On the Formatting toolbar, these buttons let you alter the indentation of specific parts of the outline, add and remove bullets, and add and remove numbering.

There's also a PowerPoint toolbar dedicated specifically to outlining tools. To see it, choose View, Toolbars, and Outlining. The buttons on this toolbar let you move items and up and down in outline importance and collapse and expand subsections of outlines one slide at a time or for the entire presentation at once.

Printing Outlines

You may discover that the best speaking notes you can carry to the podium come from your presentation's Outline view. Here you have a streamlined reference that shows exactly which talking points are coming up on each slide. To print a slideshow's outline, choose File and Print Preview. In the drop-down list at the top of the screen labeled Print What, choose Outline View. ■



Focus on your presentation's message—not just its looks—by opening the text-only Outline view.

appears as simple black words on white text; no slide formatting to make them hard to read.

The Outline view also has the advantage of letting you easily see the text on several slides at once. This makes it easy to compare what you're presenting on adjacent slides and also makes it easy to cut, copy, and paste text among slides. Just highlight the words you want to move as you would in any other text editing situation and then cut (or copy) and paste them into a new location. This view also lets you move entire slides to new spots in the presentation. Click the slide and drag it to the new location.

BY TREVOR MEERS

Hardware Without The Plug!

When you're unplugged, pick up an issue of *CPU* and plug into the world of high-tech computing. Each month *CPU* brings you a functional mix of hardware reviews, information on modding, the latest and greatest software, and the opinions of some of the industry's leading columnists.



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Quick Tips

Secrets For Succeeding In Common Tasks

BY STEPHEN J. BIGELOW

Microsoft
Excel

Question: I work with large spreadsheets, and I'm always wasting time looking through cells for certain bits of information. Is there an easier way to search for specific items?

Answer: Tools such as Microsoft Excel 2003 provide a versatile filtering feature that can search columns of data for entries containing specific items. Click the cell on top of the column you

want to search and then click Data, Filter, and AutoFilter. A down arrow appears below the column heading. Click the down arrow, and a list of items will appear. Scroll through the list and select the value that you want to search against. You can also create a unique filter by selecting Custom from the list of values. Choose a comparison operator, enter the value that you want to filter against, and then click OK to run your filter.

Microsoft
Excel

Question: How do I keep text from spilling outside of my Excel spreadsheet cells?

Answer: It's a simple matter of formatting. Click the cell you're having problems with. Click Format and Cells and select the Alignment tab. Check the Wrap Text box and click OK. Now

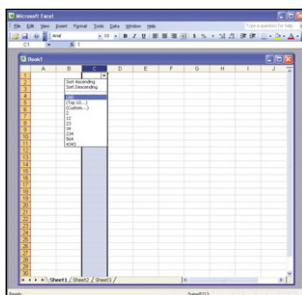
when you type in that cell, the text should wrap around inside the cell rather than just spilling off to the right. However, this may make the cell larger than expected and affect the sizing of your spreadsheet in unexpected ways. If you decide that you don't like the look of this text wrap, just repeat this process and uncheck the Wrap Text box.

AOL

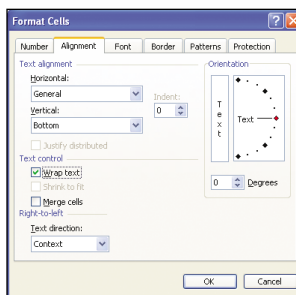
Question: Someone told me that AOL IM buddies can access files from my computer. Is this true, and if so, how do I prevent it?

Answer: Later versions of AIM allow buddies to share files from a shared folder on your PC (often your Desktop by default). However, you can change the shared folder location and alter the rules that define access. Right-click the AIM icon in your System Tray and select Preferences. Select File Sharing from the list on the left menu. Under File Access, simply click Don't Allow For Users On

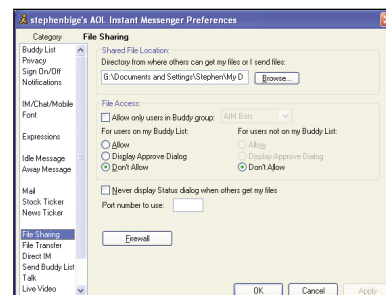
And Off Of Your Buddy List—this will prevent anyone from accessing any files on your computer at all. If you want members of your Buddy List to have some access, select the Display Approve Dialog radio button instead. This lets you approve any access before it actually occurs. If you'd rather create a new folder for any shared access, enter the new folder location in the Shared File Directory field or use the Browse button to find a suitable new location for your shared files. Remember to click Apply to accept any changes and then click OK to exit the Preferences dialog box.



Tools such as Excel provide powerful filtering features to help you find specific bits of information in long sets of data.



Use the Wrap Text feature to allow text to wrap within a spreadsheet cell rather than spilling off to the right.



AIM lets you restrict access to your shared files folder or disable access entirely for optimum PC security.

Memory

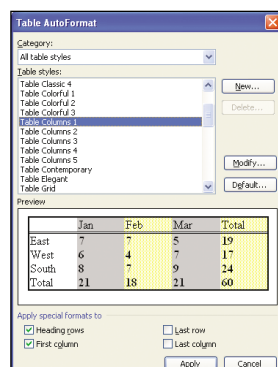
Question: I want lots of memory for my new PC. Is it better to order a configuration with four smaller memory modules or two larger memory modules?

Answer: It's really a trade-off that will depend on how you see your PC use changing in the future. Ordering four smaller memory modules (for example, four 256MB modules for a total of 1GB of RAM) is often a bit cheaper than ordering two larger modules (two 512MB modules for 1GB of RAM). However, ordering the four modules will

typically fill all of the motherboard's available module positions, so you can't add more RAM in the future without removing (wasting) some of the installed RAM. Ordering two larger modules to start will typically leave some module positions available for future expansion. So if you feel that your PC may need even more RAM in the future, spend a few extra dollars and buy the two larger modules, thereby leaving other positions available for the future. If not, save the cash and go with the four smaller modules.

Microsoft Word

Question: Is there a way to format a table using a standard format rather than having to manually format each cell or table?



Answer: Tools such as Microsoft Word 2003 offer a variety of standard formats that can be applied to tables. Just click anywhere in your table and then click Table and Table AutoFormat. A formatting dialog box will appear, so you can select from a variety of established format styles. Examples are shown for each format, so you can experiment with different looks until you find the one that suits the situation best. When you decide on a format, click Apply to reformat your table. If you make a mistake or change your mind, click Undo and repeat this process to apply another table format.

Tools such as Word offer a range of standard formats that can quickly be applied to tables within your document.

VoIP

Question: I just installed a VoIP (Voice over IP) adapter for my home telephone, but now I can't send faxes. Does VoIP support fax transmissions?

Answer: Because fax machines are designed to use the same voice bandwidth ordinary telephones use, your fax machine should work over your VoIP connection. However, advanced fax features, such as high baud rates and error correction, can sometimes cause fax problems across your VoIP link. Before you waste time following a nonexistent problem, try sending a

fax to the destination using a regular phone line. If you still have problems across a normal phone line, there's an issue with either your fax or the destination fax, not the VoIP link. If you send a fax successfully across a normal phone line, you prove that both faxes are working, so the issue must be with the VoIP link. If the trouble points to VoIP, try resending at a lower baud rate (such as 9600bps). If the problem persists, try disabling the fax machine's error correction mode (ECM is usually enabled by default) and try faxing again.

Microsoft Word

Question: Is there an easy way to reformat paragraphs to match each other without individually reformatting each paragraph?

Answer: Microsoft Word 2003 provides a Format Painter feature that will conveniently capture the formatting of one paragraph and "paint" that format onto other paragraphs. Highlight the paragraph whose formatting you wish to copy and

click Format Painter in the Standard toolbar. (It's a little paintbrush icon to the right of the New, File, Save, and other icons.) Now highlight the paragraph(s) to which you want to apply the new formatting. Once highlighted, Word will automatically apply the formatting onto the selected content. If you make a mistake or the results do not look as intended, click Undo to reverse your changes and try again.

The Next Wave

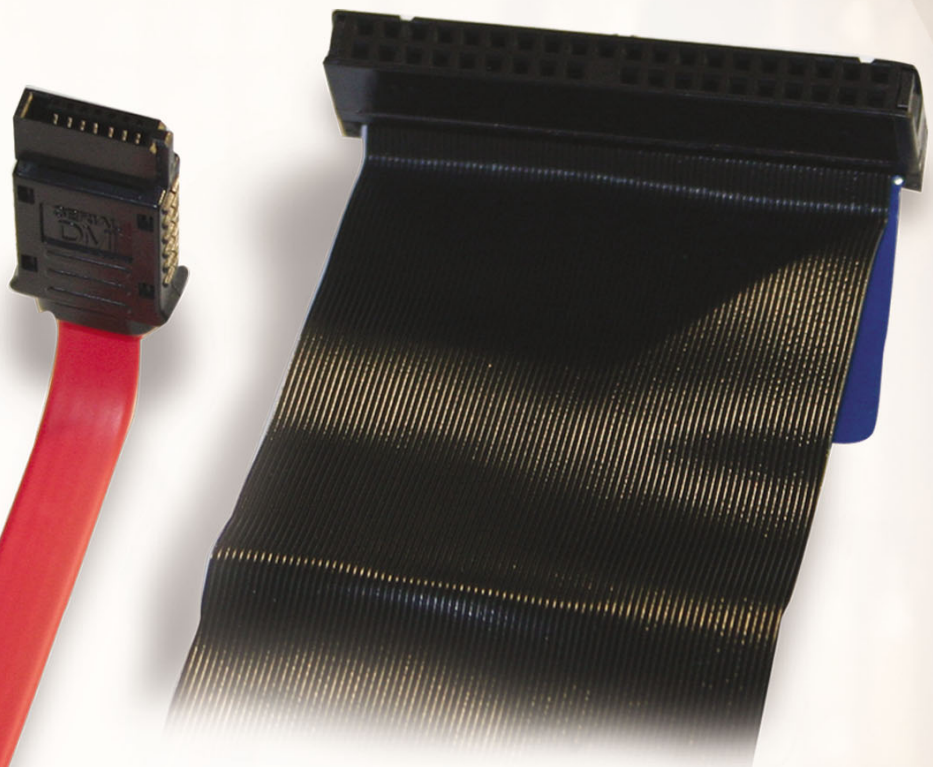
A Guide To SATA Hard Drives

SATA (Serial Advanced Technology Attachment) hard drives have been around for a few years now, but they are still considered the new kid on the hard drive block. Some computer users may not know if their PCs even have one of these drives, let alone why computer enthusiasts

now prefer them to IDE (Integrated Drive Electronics) hard drives. Here's a quick comparison of the two types of hard drives that make up the vast majority of the market.

Smaller Cables

The cabling used in SATA hard drives is a gigantic improvement from that used in IDE hard drives. Both are keyed, meaning that they will only connect to a device and your motherboard one way, so you don't have to worry about incorrectly plugging the cable in. However, most IDE drives connect to your motherboard via a bulky 40-pin or 80-pin cable. SATA drives use a much smaller 7-pin cable. For those of us with windows in our cases, the thin 7-pin cable offers a great way to start cleaning up a case ridden with clutter. It also allows for better air circulation in your case.



SATA cables are much more conducive to good air circulation in your case than IDE cables. They're also handy for aesthetic purposes if you have a case with a window.



The bottom drive is an IDE drive that has a 4-pin molex connection for power. You can power the middle drive, a SATA 150Mbps drive, via a molex connection or, if your power supply has them, a 15-pin SATA power connection. The top drive, another SATA drive, is a good forecast of where hard drives are heading. As SATA power cables become standard power outlets on power supplies, the 4-pin molex connector will eventually become obsolete. The middle is basically a combination of the two.

Transfer Rates

From a performance standpoint, SATA hard drives are more beneficial than IDE drives because of their superior transfer rates. IDE hard drives, also known as ATA (Advanced Technology Attachment) or PATA (parallel ATA) hard drives, hit their apparent ceiling with the release of the IDE Ultra ATA 133 hard drives. These transferred data (via that wide 40-pin cable) at 133MBps (megabytes per second). The first SATA drives were the SATA 150s. These drives used a 7-pin cable and could transfer data at up to 150MBps. The next generation of SATA drives, the SATA 3.0 Gbps (gigabits per second), can transfer data twice as fast as SATA 150.

Compatibility

Another handy feature of SATA is its compatibility. As long as you have a SATA port on your motherboard, you can use a SATA hard drive. SATA 3.0 Gbps drives are backward-compatible with SATA 150 ports, meaning that if your computer's motherboard only supports SATA 150, you can still add a SATA 3.0 Gbps drive, but it will run with a transfer rate ceiling of 150MBps.

Conversely, if you buy a motherboard that supports SATA 3.0 Gbps, you can still use your SATA 150 drive. However, it won't make your drive any faster, and your programs won't load more quickly, but at least you still have the ability to use them, even as you upgrade your other components

Freedom From The Master/Slave Interfaces

A peculiarity that gave many computer users fits when trying to install an additional IDE hard drive was the jumper settings that depended on the drive's role on the master/slave cable. If your hard drive was connected to the Master port of your IDE cable, you'd have to place a jumper over a certain pair of pins. If you had an additional drive connected in the slave port, you'd have to remove a jumper from that drive.

SATA eliminates this entire process. Instead of using a master/slave configuration, it simply uses one cable per device, so every device is treated as a separate master device by your motherboard.



They look similar, but the SATA drive on the left is quickly replacing the IDE drive in most computers because it offers, among other advantages, a higher throughput rate while using a smaller cable and an escape from the confusing Master/Slave interface.

What To Do When . . .

ScanDisk

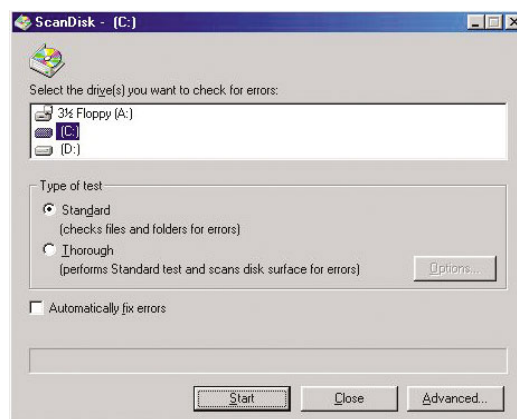
(Or A Similar Utility) Keeps Restarting

Despite what you might think, your computer isn't stupid. At least not with regard to which applications it lets access its operating system, memory, and other critical systems. The applications that enjoy this exclusive access to your computer operate at a low level on your system, which means that they can peek at and tinker with parts of your computer that are off limits to other applications such as Web browsers and word processors. Some examples of low-level applications include disk-cloning applications, encryption software, antivirus programs, disk defragmenters, ScanDisk, and other diagnostic utilities, such as Norton Disk Doctor. As a result, Windows is pretty picky about these low-level apps, and clashes between two or more running simultaneously often result in errors.

Conflict. One common error deals with Windows ScanDisk, which is

a hard drive scanning and error-fixing utility in Windows 95/98/Me/2000. Whether you or your computer initiated ScanDisk, it's important that no other applications access the hard drive during the scan. If another application interrupts ScanDisk's access to the hard drive, you'll get an error, and ScanDisk will restart. Sometimes the error will specify that Windows or some other program is writing to the hard drive, but other times, the reason for the failure isn't as apparent. Unless the interfering application is disabled, ScanDisk will continually restart. Disk defragmenters also require the same kind of exclusive and continuous hard drive access in order to work.

Antivirus applications are one of the most common culprits in



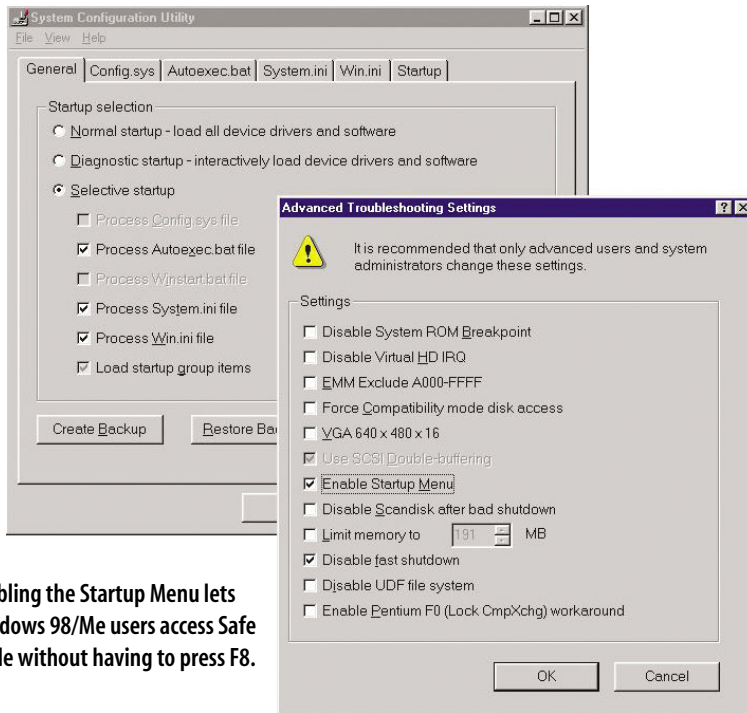
ScanDisk sometimes doesn't play nicely with others.

these sorts of errors because they intermittently access the hard drive without your knowledge. Other background applications can cause similar problems.

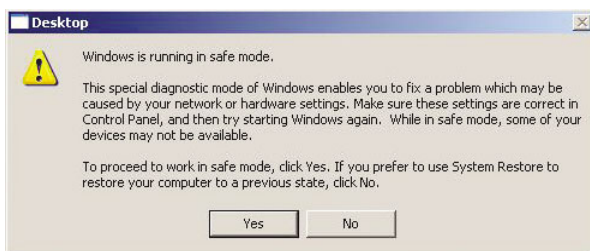
Resolution. If you've encountered errors or you just want to run a low-level application without conflicts, make sure you close all programs, including antivirus applications. (Be sure to turn your antivirus software back on after the utility finishes running.) It's also a good idea to disable your screen saver and unplug your RJ-45 Ethernet cable from your computer.

Although the above precautions should allow for a clean run, the best way to ensure that no other programs access the hard drive during a ScanDisk or defrag routine is to run those utilities in Safe Mode. Start by restarting your computer. As soon as the screen goes black, start pressing F8 until





Enabling the Startup Menu lets Windows 98/Me users access Safe Mode without having to press F8.



Running ScanDisk in Safe Mode reduces the chance that it will conflict with another application.

you see the Windows Advanced Options Menu.

Win98/Me users can forego frantically pressing the F8 key by configuring Windows to automatically display the Startup Menu. Click Start, click Run, type `msconfig` in the text box, and then click OK. Click the Advanced button on the General tab and select the Enable Startup Menu checkbox. Click OK twice and then click Yes to restart Windows. Use the arrow keys to highlight Safe Mode (typically option 3) and press ENTER. Log on to the administrator's profile and then click Yes when the Windows Is Running In Safe Mode dialog box appears. Safe Mode only loads the most critical aspects of your operating system and lets you adjust your computer's settings. As

a result, most third-party applications won't work. Now ScanDisk can run unhindered.

Click Start, click Run, type `scandisk`, and then click OK. Click the drive you want to scan, click the radio button in front of Standard or

Thorough depending on the type of test you want to run, and then click Start.

You can also run the Windows Disk Defragmenter from Safe Mode. Start by clicking Start, Programs (All Programs in WinXP), Accessories, System Tools, and then clicking Disk Defragmenter. Win2000/XP users need only select the drive and click the Defragment button. If you're using Win95/98/Me, click the Settings button, click the Rearrange Program Files So My Programs Start Faster and Check The Drive For Errors checkboxes, and then click OK. Select the drive you want to defrag and click OK.

When you've defragged and scanned your hard drives to your heart's content, restart your computer to load Windows normally. If you configured Windows to automatically display the Startup Menu, just select the option to Boot Normally or Normal.

Easy Does It

Windows doles out access to its critical systems very sparingly and for good reason. If you find yourself facing problems with low-level applications, check for conflicts with other low-level apps. The resolution is often as simple as letting the applications execute uninterrupted, one at a time. ■

BY ANDREW LEIBMAN

FIND MORE ONLINE

For more information about keeping your computer in tip-top shape, please see the SmartComputing.com articles listed below.

Quick Tips: Secrets For Succeeding In Common Tasks
www.smartcomputing.com/scapr05/quicktips

Roadside Assistance: Defrag Your Drives
www.pctoday.com/pctfeb04/defrag

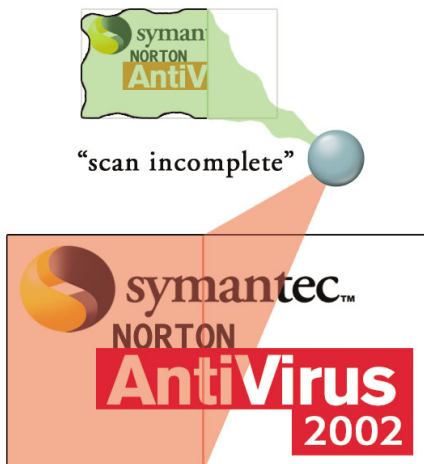
Q&A/FAQs
www.smartcomputing.com/mar04/scandisk

Examining Errors

BY JEFF DODD

Problem: After performing a manual scan in Symantec's Norton AntiVirus 2002 and reviewing the scan summary, a reader receives an on-screen error message. The reader can close the message, but upon doing so, the scan summary indicates the scan was incomplete.

Error Message: "Microsoft Visual C++ Runtime Library Runtime Error!
Program: C:\Program Files\
Norton AntiVirus\NAVW32.EXE.
R6025 - Pure virtual function call."



Solution: This error occurs because of a known issue with the reader's version of Norton AntiVirus. Symantec hasn't released a fix for this issue and—given the fact that this version has been out for four years—isn't likely to release one in the future.

Our first recommendation is for the reader to upgrade to a recent edition of Norton AntiVirus or some other reputable antivirus utility. We suspect the reader has let his annual update subscription lapse and is therefore using an out-of-date utility. This isn't prudent computing behavior; any virus, worm, or Trojan horse released since the reader's most recent update can slip past the utility's monitoring features. Indeed, viruses are known to cause this same type of "R6025" error in other applications, including Windows Explorer, although we don't think that is the situation here. Before installing the new antivirus utility, however, he should uninstall Norton AntiVirus 2002.

(NOTE: Norton AntiVirus 2006 doesn't support Windows 98, the reader's OS [operating system]. For this reason, the reader must use the Norton

AntiVirus 2005 installation disc that comes bundled with every copy of Norton AntiVirus 2006.)

An alternative solution that works in some cases is to locate and delete the Rpawinet.dll file. This is a hidden file, so the reader must configure Windows to display it. He can do so by opening My Computer, selecting the View (or Tools) menu, and clicking Folder Options. On the View tab, he should select Show All Files, deselect Hide File Extensions For Known File Types, and click OK. If prompted, he should click Yes to verify his actions, and then he needs to click OK to activate the settings.

Next, the reader needs to reboot the computer to Safe Mode. Once there, he should open the Start menu, choose Find, click Files Or Folders, and then use the resulting search tool to locate the Rpawinet.dll file on his system. If he finds the file, he should rename it Rpawinet.old and reboot his system back into normal mode. If his PC performs fine after the reboot, he should locate the Rpawinet.old file and delete it.

Problem: Each time a reader tries to run Disk Defragmenter in Windows Me, he receives an error message that interrupts the defragmentation. He has disabled the antivirus utility but the problem persists.

Error Message: "Drive's content changed. Restarting."



Solution: This common error message appears whenever a program tries to write data to a drive that is being defragmented. The reader has the right idea by disabling the antivirus utility because it's probably configured to regularly record entries in a log on the hard drive. System security utilities, screen savers, and email clients also may disrupt a defragmentation in process.

Rather than spend his time tracking down the various applications that may have provoked the error message, we recommend that the reader simply perform the defragmentation in Safe Mode. Safe Mode launches Windows in a bare-bones configuration that doesn't include all of the extraneous

third-party software and hardware that loads normally.

To access Safe Mode, he should start his computer and hold down the F8 or CTRL key as the system boots up. When the Windows Startup Menu appears on-screen, the reader should select the Safe Mode option and press ENTER. Windows will then boot into Safe Mode. The reader then can access Disk Defragmenter as he normally would and run the utility without any of the pesky interruption errors. For best results with Disk Defragmenter, we recommend he run it only after using ScanDisk and Disk Cleanup to cleanse the drive of accumulated drive errors and data detritus.

Problem: A reader reports that she sometimes receives a BSOD (Blue Screen Of Death) error when she tries to run multiple applications simultaneously. The error identifies a graphics driver (a program that helps a hardware component communicate with the rest of the system) as the source of the problem. To resolve the issue, the reader has upgraded her monitor, installed two new case fans, and downloaded the latest driver for her NVIDIA GeForceFX 5200 graphics card. None of these solutions has worked. The reader has received the error for approximately nine months and needs to find a solution.

Error Message: “A problem has been detected and Windows has been shut down to prevent damage to your computer. The problem seems to be caused by the following file: nv4_disp.

The device driver got stuck in an infinite loop. This usually indicates a problem with the device itself or with the device driver programming the hardware incorrectly. Please check with your hardware device vendor for any driver updates.

Technical Information: STOP: 0x000000EA (0x85920DA8, 0x86BFC3D8, 0xF796DCBC, 0x00000001) nv4_disp. Beginning dump of physical memory. Physical memory dump complete. Contact your system administrator or technical support group for further assistance.”

Solution: Generally speaking, an infinite loop error occurs in a computer whenever a string of code repeats itself interminably. In this particular case, the cause of the infinite loop is most likely a locked-up NVIDIA graphics card. The card may have locked up for any number of reasons; for instance, perhaps it became too hot or maybe it encountered a buggy driver. Whatever the cause, the lockup prevents the video card from processing the code it receives from the CPU. As a result, the code is rebuffed and sent back to the CPU, which again directs it to the video card for processing, where it is rebuffed another time, and the infinite loop begins.

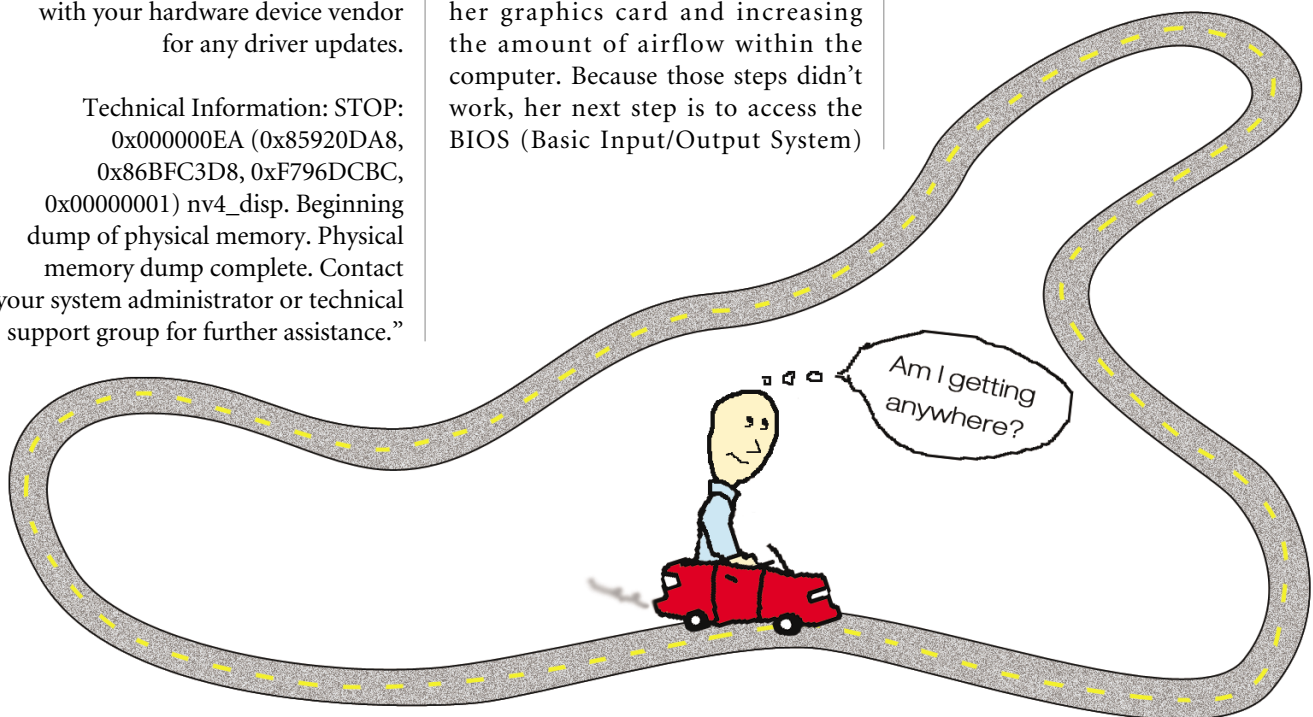
The only way to resolve this error is by addressing the problems that prompted the infinite loop and correcting them. Unfortunately, it's difficult to determine exactly what those issues are, so the reader must cast a wide net of possible solutions. She has taken several steps in the right direction by updating the driver for her graphics card and increasing the amount of airflow within the computer. Because those steps didn't work, her next step is to access the BIOS (Basic Input/Output System)

setup utility—her users manual or PC manufacturer can tell her how—and restore the default configuration.

To do so, the reader should access the BIOS Help menu and follow the on-screen instructions for loading the defaults. The process typically involves pressing a function key, such as F5 or F9, and pressing ENTER to verify the restoration.

If the reader continues to experience the infinite loop error, the next step is to upgrade the BIOS altogether. She should contact the PC manufacturer to obtain the latest edition of her particular BIOS. The manufacturer also can help her install it properly.

The last alternative is to replace the video card or the motherboard (either one may have malfunctioned) or replace the power supply because it may not have enough wattage output to support the rest of the system. If the reader chooses to replace the power supply, she should get one that has a higher power output than her existing power supply.



Have questions about an error message you've seen? Send us your message (errormessages@smartcomputing.com), and we'll try to decipher it. Tell us what version of Windows you're using, give the full text of the error message, and provide as many details in your explanation as possible. Volume prohibits individual replies.

Fast Fixes

Security Update for DirectX 7.0 For Windows 2000

Problem: Microsoft has discovered a DirectShow problem a hacker could exploit to take control of your PC.

Resolution: Install this 771KB file to prevent a remote attack. To download the update, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type **KB904706** in the Search text box and click Go. Click the link named Security Update For Windows 2000 (KB904706) and then click Download. After the transfer is complete, double-click the file (Windows2000-KB904706-v2-x86-ENU.exe) to begin the installation process.

www.microsoft.com/downloads

Windows XP Update

Problem: You can't use Windows Update or Automatic Updates after an Access Violation error occurs when engaging the Automatic Updates service.

Resolution: Download and install this 1.1MB update and restart your PC to restore the Updates processes. To download the update, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type **KB910437** in the Search text box and click Go. Click the link named Update For Windows XP (KB910437), and in the Validation Required box, click Continue. Follow the on-screen instructions for validating your copy of Windows, and the site will return you

to the download page. Click the Download button, and after the transfer is complete, double-click the file (WindowsXP-KB910437-x86-ENU.exe).

www.microsoft.com/downloads

Security Update For Windows 2000

Problem: A flaw in Windows could let a hacker take complete control of your PC. That means an attacker could install programs, change or delete data, and create user accounts.

Resolution: To prevent loss or theft of valuable data, install this 1.5MB patch. To download the patch, type the URL we listed below in the Address field of your browser window. After the Download Center page loads, type **KB908523** in the Search text box and click Go. Click the link named Security Update For Windows 2000 (KB908523) and click Download. After the transfer is complete, double-click the file (Windows2000-KB908523-x86-ENU.exe).

www.microsoft.com/downloads

Update For Windows XP Subfolders

Problem: Install this update if you encounter problems when you try to view contents of a subfolder on a networked PC. Many users do not experience this problem until they install Security Update For Windows XP (KB885250).

Resolution: Install this 967KB update and then restart your PC to make

these folders accessible again. To download the update, type the URL we listed below in the Address field of your browser window. After the Download Center page loads, type **KB896427** in the Search text box and click Go. Click the link named Update For Windows XP (KB896427), and in the Validation Required box, click Continue. Follow the on-screen instructions for validating your copy of Windows and the site will return you to the main download page. Click the Download button, and after the transfer is complete, double-click the file (WindowsXP-KB896427-v3-x86-ENU.exe) to begin the installation process.

www.microsoft.com/downloads

Fix Of The Month

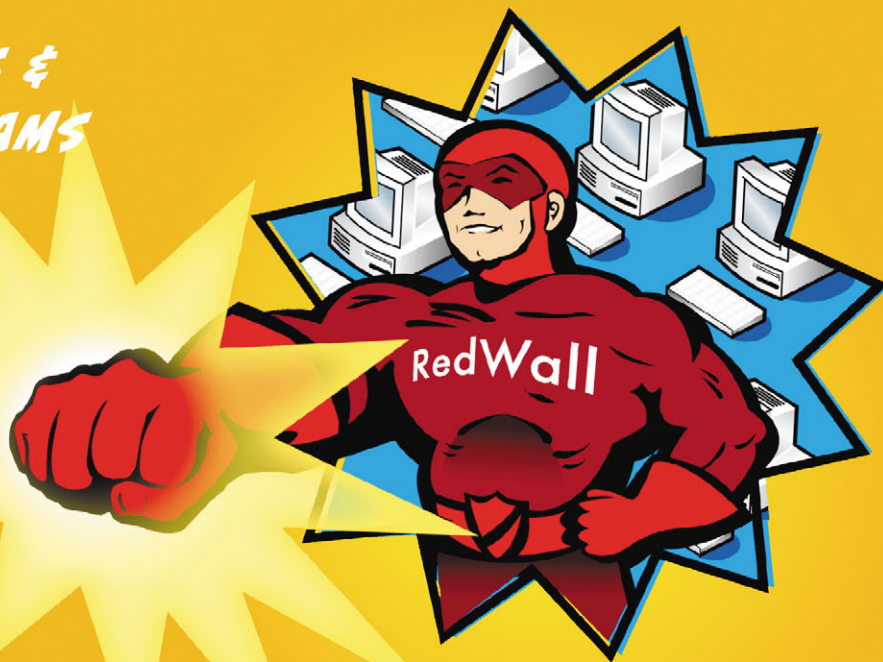
System Restore Update For WinXP

Problem: You have a WinXP PC with Service Pack 1 and experience problems with System Restore.

Resolution: Download and install this 555KB update to make System Restore work properly. To download the update, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type **KB835409** in the Search text box and click Go. Click the link named Update For Windows XP (KB835409), and in the Validation Required box, click Continue. Follow the on-screen instructions for validating your copy of Windows and then the Web site will return you to the main download page. Click the Download button, and after the transfer is complete, double-click the file (WindowsXP-KB835409-x86-ENU.exe) to begin the installation process.

www.microsoft.com/downloads

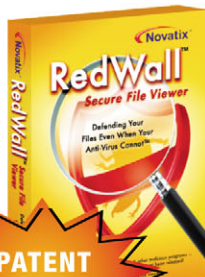
**GIVE YOUR ANTI-VIRUS &
ANTI-SPYWARE PROGRAMS
TIME TO REACT.**



**STAY ONE STEP AHEAD
WITH REDWALL
SECURE FILE VIEWER.**

Anti-virus and anti-spyware providers do an excellent job of protecting you against known threats. With new or unknown threats, however, they need time to create the antidote. They can't protect you until they've developed a new signature file that recognizes the threat and you've downloaded and installed the necessary update.

RedWall stops new threats WITHOUT needing new signature files, so you're protected even against brand new threats. RedWall Secure File Viewer is always one step ahead, giving your anti-virus and anti-spyware time to react.



**PATENT
PENDING**

• **PROACTIVE ZERO DAY PROTECTION**

Know your company data is protected even when the latest virus definition files have not yet been released.

- **BLACK BOX PREVIEWING** Safely preview files in a "quarantined" no-risk environment to ensure they contain legitimate data and not viruses or other malicious code.

- **BOOST PRODUCTIVITY** Instantly preview any file without taking the extra time necessary to launch the application which created it. RedWall's previewing is often 300% faster than opening the same file with its associated program. Even preview multiple email attachments in one step - no more wasting time launching multiple applications.



Download your free trial at <http://www.novatix.com/OneStepAhead>

Novatix Corporation Tel: 303-516-1800 ext. 104 Email: info@novatix.com www.novatix.com

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Utilities

Q In order to retrieve some lost information, I need to obtain the hexadecimal address of the hard drive sector where it had been stored. This information is in the same sector now occupied by a small remnant of the file I need to retrieve. Can you tell me how to translate the path and file name into the sector number?

I suppose it's stored in the FAT (file allocation table), but using ATTRIB in MS-DOS to show hidden files, I've still been unable to find the FAT. I'm using Windows 98 SE (Second Edition) with FAT16. My hard drive sectors contain 32,768 bytes each; however, the file never had become that large, so it should still be in its original sector.

A Your hard drive, in addition to having who-knows-how-many cylinders, heads, and sectors per track, is also divided into partitions (well, at least one) and **clusters** (the smallest portion of the hard drive where a file or part of a file may be stored). A drive with a 16-bit FAT (or FAT16) will have 65,535 clusters per partition, and the size of each cluster is determined by how large each partition is on the drive (nominally a maximum of 2GB). However, before we make you and the rest of our readers dizzy attempting to describe the rest of the relationship between clusters and hex addresses in FAT16, we'll do our best to keep it simple, OK?

There are many relatively inexpensive applications available online to help you recover lost files. (We'll discuss some of them in a moment.) For the most part, these applications don't require you to have a computer science degree to operate them, although some are suitable for use only if you have a considerable amount of expertise. One of the things you *shouldn't* do is write anything to the drive in question until you've recovered your file. For example, don't download and store the applications we discuss in the following paragraphs on the same volume as your lost data, or else you risk overwriting your file, and it really will be gone forever.

Binary Editing Tools (garbo.uwasa.fi/pc/binedit.html), from the University of Vaasa in Finland, is a collection of free disk-level tools (including a FAT editor and Hex viewers/editors), but you must be cautious and use them at your own risk—and only use them if you have expert-level experience.

DataRecoveryWizard 2.0 (www.easeus.com) comes as a free demo that will show lost files but isn't able to recover them. To obtain the full version of the software, you'll need to pay \$99. The DataRecoveryWizard Professional version will even recover lost files from compressed volumes, but it'll cost you a little more to purchase it: \$129.

Symantec's Norton SystemWorks 2006 Premier (\$99.99; www.symantec.com) includes Norton Disk Doctor as part of Norton Utilities, both of which add numerous functions to the SystemWorks 2006 Premier suite. Please note that the standard version of SystemWorks 2006 doesn't include Norton Utilities, so you'll need to make sure you purchase the version specifically labeled as Premier.

R-Undelete FAT (www.r-undelete.com) has a free demo you can use, but it won't recover lost files; you'll need to pay \$29.99 for the full version. Plus, this program can't recover files which were lost by repartitioning or are from NTFS (NT File System) or NTFS5 drives. R-Undelete, \$54.99, can undelete files from FAT drives (12-bit, 16-bit, 32-bit), as well as from NTFS and NTFS5 drives, but it can't undelete from repartitioned drives. R-Studio, \$79.99, can recover files from all file systems and from trashed partitions, and it includes a hexadecimal viewer/editor.

Search and Recover 3 (free 30-day trial, \$39.95 for full version; www.iolo.com/sr/3), from iolo technologies, is available as a standalone utility (which is no longer the case for Norton Utilities) and as part of a larger suite, System Mechanic 6, which costs \$49.95.

SmartSoft's Smart Undelete (www.smartundelete.com) works with FAT and NTFS volumes

by saving data to image files and then converting the files. A free demo is available, but it will only save temporary image files and can't completely recover them. The full version costs \$29.90.

The WinHEX 12.85 (www.sf-soft.de/winhex/index-m.html) application from X-Ways

Software Technology AG has a price tag of \$51 for the personal version, which includes a long list of features and lets users view FAT structures, as well as recover files. A free trial version also is available.



Online

Q I play World of Warcraft frequently, but a friend told me that this game installs software that spies on me. Is there any truth to this rumor?

A World of Warcraft (www.blizzard.com) is an immensely popular MMORPG (Massive Multiplayer Online Role-Playing Game) developed by Blizzard that has millions of users worldwide. Users play virtual characters that can earn money, collect rare items, and participate in quests set in the realm of Azeroth.

Because of its popularity, some users have created profitable businesses buying and selling the virtual items used in the game. For instance, if you want to purchase in-game gold, you can use real money to purchase it through several online companies. These companies take your real money, and transfer the virtual gold to your in-game character.

In addition to this real-life economy that intermingles with the virtual Warcraft economy, the creators of World of Warcraft have to

contend with people trying to gain an unfair advantage through "bots" or other programs that give their characters an unfair advantage over other players. These bots act faster than any human player could and ruin the game experience for legitimate users.

To protect legitimate users from bots and other programs that give unscrupulous users an edge in World of Warcraft, Blizzard created a program called Watcher. Watcher starts whenever you launch World of Warcraft, and it keeps an eye out for any known bots or programs designed to exploit the game.

In our opinion, Watcher is a legitimate program that's intended to protect the integrity of the game. Blizzard has been relatively open about Watcher's existence since news of the program hit the Internet. The company obviously doesn't want to provide too many details about how Watcher works, as that would aid people in circumventing it, but we don't think you need to be worried about this program spying on you.



Hardware

Q I'm contemplating purchasing a new computer in the next few months, and I'm curious about switching to an Apple (Mac) computer. I've heard they now run on the same CPUs as Windows computers. What do you recommend?

A Switching computing platforms isn't something to be undertaken lightly. The main problems that will occur revolve around your software. In our experience, moving from Windows to Mac OS X (Apple's latest OS [operating system]) is quite easy if you're willing to relearn some of your habits. But you'll need to find new software for OS X to take the place of your existing software for Windows. There are third-party apps that let you run Windows software on OS X, but there's a substantial performance penalty in doing this. Also, you won't be able to play most of the Windows games on your Mac because OS X uses a different graphics subsystem than the DirectX subsystem that Windows uses.

Currently, most computers made by Apple use either a G4 or a G5 CPU made by IBM. However, Apple has announced plans to switch over to Intel's CPUs within the next few months, and this opens a number of intriguing possibilities for users contemplating a switch to OS X.

First, there's a strong likelihood that you'll be able to run Windows on your Mac. Because it will use Intel's CPUs and standard PC hardware, you should be able to install Windows on your Mac and run either OS X or Windows as needed. This means that you can continue to use your old software under Windows and slowly purchase new software for OS X.

In addition, it means that the performance penalty imposed by applications such as Virtual PC will become a thing of the past. Because Virtual PC won't have to emulate an entirely different CPU, applications should run much faster than before.

Apple has said that it intends to introduce Intel-based systems in its notebooks and lower-end Macs first, and it will do the same in its higher-end Macs later. If you can't wait until these new systems are released, the cheapest way to dip your toe in the water

would be to use Apple's Mac mini. The Mac mini starts at \$499 (www.apple.com/macmini) and can use your existing monitor, keyboard, and mouse.



Online

Q Oftentimes, when printing out pages from a Web site in the Portrait mode, letters or words are cut off. I have tried to correct this by changing the print size and adjusting the margin on the printer. Is there a fix for this other than using the Landscape mode for printing?

A Properly printing Web pages is a difficult task unless the Web designer has taken steps to make your life easier by creating a Printer-Friendly version of each Web page. The main reason for the difficulty is that Web pages are designed to be viewed on your monitor, as opposed to printed out on paper.

When there's an alternate version of a Web page, you'll most likely see a link titled Print

Version, Printer-Friendly, or something similar. However, this type of alternate version often lacks much of the style of the original Web page, and many Web pages using Flash elements can't be printed properly.

If you want to capture an exact copy of a Web page, you'll need to use a screen-capture utility to actually create an image of the page. Although you can print such an image, you won't be able to edit any of its content in a word processor. So, if all you're concerned about is capturing the text of a Web page, you'd be better off just highlighting the page's text in your browser window and pasting it into a document. Again, it won't have the style and panache of the original Web page, but it may be good enough for your needs.



This Old Computer

Q My computer is a "white box" P3-550 running Win98. It's been a reliable computer and does what I need it to do without giving me any grief. However, a friend of mine is constantly telling me that I need to upgrade to a more modern computer. Should I just ignore him, or is it time to put my old computer out to pasture?

A Deciding when to upgrade or replace a PC depends on the individual circumstances of those who are using it. Usability, finances, upgradeability, and support all play a role in deciding when to jump to a new PC. Although we'd have no problem recommending that someone keep an eight-year-old car, it's a bit more problematic to do so with computers because they change in performance and usability so quickly.

The first criterion is to decide whether your computer is suitable for your current and future needs. As you've said, your "white box" is doing fine for your current work-and-play situation. Second, you need to evaluate your future needs. If you don't plan to change your computing habits, you're probably set for at least a few more years. However, give some thought to how computing has changed in the last five to 10 years.

You might find that you want to do different things but have subconsciously ruled them out due to your computer's age.

Third, you'll need to consider support for your PC. As the hardware gets older, it becomes more difficult to find spare parts, and the spare parts you'll find will be more expensive due to their scarcity. If you're using esoteric or proprietary hardware, it may be difficult to find a technician who is familiar with your equipment. In addition, adding new peripherals may be difficult.

You'll also need to consider support for the software that runs on your PC. Microsoft has stated that they will support Win98 until June 30, 2006, but after that date, you won't be able to obtain any security or product updates to your OS. In addition, any applications you use also will need to be watched for cut-off dates for support.

Upgrading or purchasing a new PC has an obvious impact financially, but if you haven't priced a new one recently, you'd be surprised at how far your dollar goes when buying from a large vendor such as Dell (www.dell.com). We've seen systems for as low as \$299 that are roughly seven times as fast as your current system. One hidden "cost" that you'll want to keep in mind is

the price of moving your data from an old computer/application to a more modern system.

For example, if you've been using an accounting program for your personal finances, it may have a proprietary file format. This is fine while your PC is running smoothly, but what happens if it dies or the software vendor goes out of business? If you're locked into an old file format that's unsupported by current applications, you may be stuck in a software dead end.

By upgrading on a regular basis, you're essentially "future-proofing" your data.

Our recommendation is to use a PC for at least five years. At the end of the five-year period, work through our list of important criteria and determine if the PC will meet your needs for a bit longer. If not, make arrangements for financing that's appropriate for you and take the plunge with a new computer.



Online

Q I've heard about "bittorrent" files, but I'm scared to download anything for fear of being a pirate. Is BitTorrent safe?

A BitTorrent is a fantastic technology that has suffered the same fate as many file-sharing apps: an association with software and intellectual property piracy. Despite this association, it's a valuable system for downloading files online.

Normally, when you download a file from a Web site, you make a direct request to the Web site's server, and this server sends you the file. This works fine when the number of people requesting the file is low, but when the number of requests is high, the server's ability to satisfy all the requests can easily be overwhelmed. This is especially true when the file being requested is large, as in the case of a multimedia file.

For example, a movie trailer may be 50MB in size, so if 10 people try to download it simultaneously, the server would need an Internet connection capable of transferring 500MB of data in a reasonable amount of time. Scale this into thousands of users for a popular file, and it's easy to see that most servers would crash under this load.

BitTorrent turns this paradigm on its head. Instead of users downloading the file from a central server, they instead download it from each other. This is known as peer-to-peer file sharing, and BitTorrent makes it easy. We'll walk through how you would use BitTorrent to download a large movie trailer.

First, a user downloads and installs one of the many BitTorrent clients—such as the version you'll find at www.bittorrent.com—that are freely available. Next, the user downloads a small file (typically with a .torrent extension) that contains metadata about the file the user is seeking to download. This metadata consists of a list of peers to retrieve the file from, as well as the location of the BitTorrent tracker server. Clicking the torrent file starts the actual download process.

During the download process, your BitTorrent client is doing many things. First, it's contacting the list of peers specified in the torrent file and requesting small portions of the trailer from each of the peers. Next, the client is advertising itself to the tracker server, in essence saying "I have X parts" of the movie trailer.

Other users may download a torrent file for the movie trailer you want and receive your PC's address. Like you did previously, they will connect to your PC and download small portions of the movie trailer. BitTorrent operates under the premise that the more you share, the faster you can download. Eventually, the movie trailer will be completely downloaded. If you leave your BitTorrent client running, others can continue to download portions of the trailer from your PC.

With this system in place, the movie studio only needs to "seed" the BitTorrent network with one or two copies of the trailer. As the trailer becomes more popular, it actually becomes easier to download because there will be a larger number of people sharing it via BitTorrent.

Unfortunately, like many technologies, BitTorrent can be used for nefarious purposes—piracy being the most common. BitTorrent doesn't provide much obscurity for pirates, but they use it nonetheless to obtain and distribute copyrighted material. But this doesn't mean that there is anything inherently wrong with using BitTorrent. Many of the files available on BitTorrent networks are not infringing on copyright laws, and many legitimate software vendors use BitTorrent technology to distribute updates to their software.

Our recommendation is to follow your instincts. BitTorrent is completely safe to use, and for legitimate software and other files, it's an easy and fast way to download data. Eventually the stigma around file-sharing will be resolved, and helpful technologies such as BitTorrent won't suffer from a stigma of illegitimacy.

Frequently Asked Questions

Answers to users' most common questions about
PCI Express

FAQ What is PCI Express, and what does it do for PCs?

PCI Express (sometimes known as PCI-E) is a high-speed expansion bus being used in many new PCs. An earlier version, the PCI (Peripheral Component Interconnect) bus, has been the standard expansion card bus since the early 1990s. PCI provides a 32-bit slot operating at 33MHz, though it has been expanded on some systems to operate at 64 bits and 66MHz. The problem with using PCI today is that it only provides a maximum bandwidth of 132MBps (megabytes per second), which is still fine for some tasks, but it isn't adequate for others such as gigabit networking.

AGP (Accelerated Graphics Port) is related to PCI, and although its developers designed it to run 32 bits at 66MHz for graphics-intensive tasks, even with clock-multiplying techniques to enhance bandwidth, AGP is hard-pressed to carry all the data needed for today's realistic graphics.

The PCI Express bus is a high-speed serial expansion interface that's intended to replace both PCI and AGP slots with a single, uniform, expansion bus architecture. So, unlike PCI and AGP, which send signals in parallel, PCI-E sends data along serial data paths (dubbed *lanes*) that can transfer information at much higher rates than PCI or AGP. In addition, PCI-E cards can use 1, 2, 4, 8, 16, or 32 lanes.

There are other differences, as well. Because PCI and AGP are bidirectional buses, the data flow must occasionally shift directions, resulting in delays (known as *latency*). PCI-E uses unidirectional signals (one serial data line in each direction, much like a road), so data can be passed to and from a PCI-E expansion card simultaneously. PCI-E graphics cards are already available, and other expansion devices (such as video capture/editing and high-speed network cards) should be available soon.

FAQ Can I use PCI Express cards in my PCI slots (or vice versa)? How can I get PCI Express devices working on my PC?

PCI-E cards are not backward-compatible with PCI slots. You cannot install PCI-E cards in PCI slots, and you cannot install PCI cards in PCI-E slots. This is because PCI-E is a serial technology, so the signal layout, signal speeds, and signaling voltage levels are very different.

If you purchase a PC with PCI-E slots, you will need to buy PCI-E cards to accommodate those slots. If you plan to transfer some legacy PCI devices to a new PC, you must verify that the new system includes enough legacy PCI slots (in addition to new PCI-E slots) on the motherboard to fit your older PCI devices. Remember that PCI and AGP are being phased out, so not all new PCs include both PCI and PCI-E slots.

However, getting a PCI-E device to work is as simple as working with PCI devices. Just install any software for the device (if needed in advance), power down and install the PCI-E device, reboot the PC, and then let Windows detect the PCI-E device, so you can enable it. As always, follow the instructions the PCI-E device manufacturer provides.

FAQ How fast do PCI Express cards work? How does this relate to AGP or PCI cards?

PCI-E is extremely fast compared to PCI, and it's fast compared to AGP. As we mentioned, typical PCI slots only provide a maximum bandwidth of 132MBps. Because AGP doubles the clock speed to 66MHz, AGP 1X passes data at 264MBps. Using clock multiplying techniques, AGP has continued to build on that speed to provide 528MBps at 2X, 1.05GBps at 4X, and 2.11GBps at 8X.

In comparison, early PCI-E versions are rated to pass data at about 250MBps per lane per direction (equaling 500MBps per lane). A PCI-E x16 card can carry 4GBps in each direction (8GBps bandwidth simultaneously in both directions). PCI-E x32 cards should double that to 8GBps in one direction (16GBps simultaneously in both). Future PCI-E iterations are expected to increase that even more.

FAQ Will I have trouble using PCI Express devices with Windows?

Although PCI-E hardware is not backward-compatible with PCI or AGP hardware, PCI-E hardware is fully compatible with PCI drivers and other software elements of Windows 2000 and Windows XP. But you shouldn't need to patch or modify the OS (operating systems) or applications to accommodate PCI-E devices.

For example, a PCI-E x16 graphics card should yield data transfers up to 4GBps on Win2000/XP systems, which is almost twice as much as the AGP 8X rate. However, Win2000/XP may not support advanced PCI-E features, and you may have to wait for Microsoft to release its Windows Vista OS in order to utilize other native PCI-E features.

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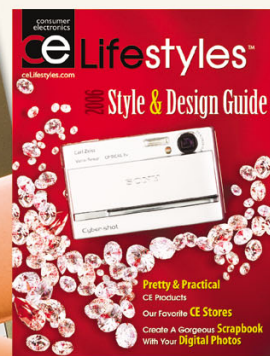


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Alienware Annoyances & Holiday Shipping Woes

In early November, my new Alienware PC arrived. My initial excitement turned to disappointment as I ran into a few problems. For starters, the CD-RW (CD-rewriteable) drive didn't work at all. Secondly, the two front USB ports weren't aligned properly with the case and were unusable. Finally, the PC will not go into Hibernate mode at all. It begins the process but never switches off entirely. I've spent a lot of time on the phone with Alienware's tech support and haven't received much in the way of actual help. My 30-day return period expires shortly, and I want to get the situation resolved before then.

John Albertson
Chicago, Ill.

With time an issue, we contacted Alienware on John's behalf posthaste. Our PR contact passed along John's information to Alienware's Critical Issues team. Manuel from Alienware contacted John and began to work out a resolution. According to John, Manuel was more than helpful and extended John's warranty period to cover him while Alienware resolved his issues. First, Manuel sent out a replacement CD-RW drive which, according to John, is functioning properly. As compensation for the two unusable USB ports, John suggested Alienware send him \$50 in gift certificates from Amazon.com to cover the purchase of a PCI (Peripheral Component Interconnect) USB card. The card adds additional USB ports to the rear of the PC where John would prefer them to be anyway. Finally, Alienware arranged a conference call between John and Microsoft to resolve the hibernation issues.

I'm on a dial-up connection, so downloading the latest browser isn't an easy task. In November, I ordered Netscape 8.0 on CD and a Netscape guidebook directly from Netscape. Five days later, I received an email informing me that

the order shipped to the proper address. After several weeks, I still have not received the CD and guidebook. I've tried contacting Netscape several times but have not received a response. As I mentioned, I can't download the free version due to my dial-up connection, so I can't upgrade my browser until the package arrives. Is there any way you can look into the shipment for me?

Herschel Gibbs
Arlington, Texas

We received this email around the holidays, when the mail always seems to be a little slower. We contacted Netscape's PR department for Herschel to inform it of the issue. The next afternoon, Herschel received a call from Netscape informing him that he should receive the package within one week's time. Netscape's representatives advised him that if he didn't receive the package, Herschel should contact them, and they'd resend the package.

Rebate Guidelines

The lure of a rebate is sometimes too tempting to pass up. The temptation is understandable, but keep a few things in mind when dealing with rebates.

Before you buy the product, make sure you know who is offering the rebate, how long it will take to receive your rebate, and who you should contact if you're rebate is late. Also make sure you have the submission form and all other items that must accompany it. Make copies of all originals before submitting them. The submission form often contains useful contact information.

You probably won't be able to return an item once you've removed the UPC from the box. Try to use the item for a week before cutting up the packaging.

If your rebate doesn't arrive, talk to a manager at the store where you bought the item. Most rebates are offered by the manufacturer, so the retailer technically isn't responsible. Last spring, however, the Federal Trade Commission held CompUSA responsible for unpaid rebates offered by QPS. The ruling doesn't apply to all retailers, but a sympathetic store manager might make good on a missing manufacturer's rebate. **I**

ACTION EDITOR

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.

Write to:
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P.O. Box 85380
Lincoln, NE 68501-5380

Or send **email** to:
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Or **fax** us at:
(402) 479-2104

Security & Privacy

It's a scary thought, but there can be a huge quantity of unwanted stuff lurking on your computer. Spam, spyware, adware, and other intrusive programs may be monitoring your every move—without your knowledge. Keep up-to-date on these topics, along with the latest security news and information with SmartComputing.com's Security & Privacy section in the Tech Support Center. You'll find articles on spyware, adware, and other nuisances such as spam and pop-ups.

You'll also find the How To Get Rid Of... section, which explains how to eliminate pesky malware from your computer. There are two lists in this section: Worms/Viruses and Spyware, Hijack, P2P & Misc. Programs. Also, be sure to check out the blog to find the latest news on viruses, worms, phishing, and other important security information. The blog is updated daily with a few articles ranging from identity theft to worms and viruses. If you missed a previous day's blog, don't worry, just click the Click Here To View The Tech Support Web Log Archive link.

And don't forget to log in and add these helpful articles (and other articles from the *Smart Computing* Web site) to your Personal Library. It's a great way to keep all of your information in one convenient location. Remember that you can't only store these articles, but you can also customize the folders you put them in for easy access later on.

Security

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We're your one-stop shop for computer problem-solving.

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
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- 3 Search articles to find all the security information you need! Subscribers, be sure to log in so you can add the articles to your Personal Library!

Security & Privacy

It's called **malware** – destructive viruses and worms, intrusive spyware and adware, and nuisances like spam email and unwanted pop-ups. (Learn more about "A Malware Primer") Check our Web log for the latest news and read our Basic Troubleshooting articles to learn how to diagnose and combat them.

How To Get Rid Of...
We'll tell you what to do to eliminate malware programs from your computer.

Web Log:

[Security breach at Sam's Club exposes credit card data](#)
 Sam's Club, a division of Wal-Mart Stores Inc., is investigating a security breach that has exposed credit card data belonging to an unspecified number of customers. Dated 12/13/2005 8:28:33 AM [More](#)

Basic Troubleshooting Articles:
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Don't Call Me, I'll Call You . . . If I Can Figure Out How To Do That

When I was a child growing up in Los Angeles, we had heavy black telephones with rotary dials and phone numbers that consisted of a two-letter prefix followed by four (later five) numbers. If you lived in North Hollywood, your telephone number might have been POplar-7923.

Those days weren't nearly the "golden age" we might like to think they were, but you could be sure of two things: First, your telephone was easy to use. Any 4-year-old could—and many did—figure it out. There was no manual because there was no need for one. Second, your old phone would always work. You could throw it out of a fourth-story window, and it would still work. You could run over it in the family's 1954 Buick Roadmaster, and it would still work. (And if for some reason—nuclear war, perhaps—it ever *stopped* working, the polite young man from The Telephone Company would come by and replace it for you, free of charge.)

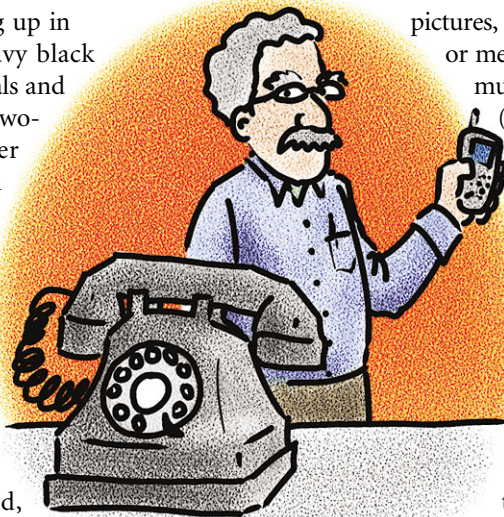
In those days, a telephone was *an appliance*. It weighed about 11 pounds and was constructed of brick and mortar and quarter-inch Bakelite, all solidly bolted together by no-nonsense guys named Mike who sported short-sleeved shirts with pocket protectors and wore white socks with their black shoes and blue cotton pants.

The thing is, the old phones did one thing, they did it well, and they'd do it forever.

These days, many of us don't even *have* home telephones. Lesley and I gave ours up after we realized that the only people who ever used it were telemarketers. We now use only our cell phones. (It felt strangely exhilarating to call our local Telco and explain that we no longer needed our house phone. I don't know whether it was the \$40 I was going to save every month or just the chance to thumb my nose at the phone company, a local outfit woefully deficient in both technological know-how and customer service skills.)

But today's cell phones are not without problems, either. They do dozens of things, but how many of those things really need doing and how easy is it to use? These are powerful, sophisticated devices, but if you can't figure out how to answer or make a phone call, what good are they?

Today's cell phone can send email, surf the Web, save and replay voicemail, look up a contact, keep an appointment calendar, respond to voice commands, play video games, take



pictures, play multiple ring tones, and store notes or memos. Newer phones also double as digital music and video players. Someplace in there (one assumes) is the ability to answer or place a telephone call, but that functionality is getting more and more difficult to access because it tends to get buried in or complicated by the phone's other functions.

I know perfectly intelligent people who rarely use their cell phones because they can't figure out the phone's voicemail system or contact list. (In fact, I know folks who can't even *find* their phones, mainly because today's cell phones are so small that one must constantly worry about the devices getting buried under a stray Post-it Note or possibly being carried off by the family's pet ferret. Although it's possible that I'm the only one who worries about the ferret thing.)

So, let's say you actually want to use one of today's cell phones. You'll have to figure out the menu system, download a ring tone or two, add your contact info, figure out how to retrieve that contact info, decide on a wallpaper, set the time, etc. If you have time, you might also want to figure out how to place and answer a telephone call. (Reading the 200-page manual might help, but probably not, because the English portion of the manual was originally written in Chinese, then translated to Korean, and then to English via Urdu, with a quick side trip by way of a proto-Indo-European progenitor of a language now used only by natives who've been isolated on a small chain of islands for the past 1,200 years and who, their language having no written form, have for centuries passed on cell phone instructions as part of their oral tradition.)

By my calculations, the above process should take you roughly 18.4 months, by which time your cell phone will be obsolete. Sorry. Now you get to go down to the local cell provider, buy a new phone, bring it home, and begin the process again.

Hardly seems worth it, does it? If you'd like to discuss it, feel free to give me a call at BEachwood 4-5789. I probably won't be able to answer, of course. ■

BY ROD SCHER

Rod Scher is a former software developer and a recovering English teacher. He's also the publication editor of Smart Computing and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at rod-scher@smartcomputing.com.

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Photo courtesy of Omar Attum Photography and stored on a Kanguru Media X-change.

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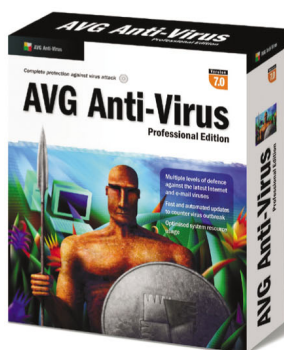
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